FACULTY OF INFORMATION TECHNOLOGY

BRNO UNIVERSITY OF TECHNOLOGY

ANNUAL REPORT 2003

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I. INTRODUCTION

Brno University of Technology (BUT) is the second largest and the second oldest technical university in the Czech Republic. It was founded in **1849** for technical, agricultural and commercial specialization. The languages of instruction were Czech and German. As a consequence of political and national disputes, Czech ceased to be used as language of tuition and in **1899 the Czech High Technical School** was founded in Brno**.** After World War I and the foundation of Czechoslovakia, the school merged with the German Technical High School (originally bilingual) to form the High Technical School in Brno, which later carried the name of Dr. Edvard Beneš, the second president of Czechoslovakia. In the period between World War I and World War II this school was among the best technical universities in Europe.

During World War II the school was, as all other high schools were, closed, the premises were used by German military institutions, and most equipment was destroyed. Immediately after the end of World War II the activities of the school were resumed. In 1951, the Technical High School was closed and the departments became parts of the newly established Military Technical Academy. Tuition for civilians continued at the former faculty of civil engineering only. However, it soon became evident that the technical university should be re-established. Since 1956 the school gradually started its activities in various fields.

The Faculty of Information Technology (FIT) at Brno University of Technology was established on 1st January 2002 from the former Department of Computer Science and Engineering, Faculty of Electrical Engineering and Computer Science, Brno University of Technology.The Department of Computer Science and Engineering (DCSE) was established in 1964. Further development of the Department was related to the dynamic development in the area of computer science and its applications, called informatics. The ever-increasing demands on specialists in this area determined the extent and orientation of the teaching, research tasks and joint projects and they also influenced the increase in number of students and staff of the Department. The increasing importance of teaching informatics at the faculty brought a transformation to the Faculty of Electrical Engineering and Computer Science (FEECS) in 1993 and separation of the computer science study plans from the rest not later than after the 1st semester of the common study programme.

At the end of the millenium the importance of the DCSE and the ratio of informatics in teaching exceeded the organizational, technical and financial limits so that the transformation of the DCSE into a new faculty could be launched.

A number of historical decisions were taken at the FEECS in 2001 in connection with the planned foundation of a new **Faculty of Information Technology (FIT)** and transformation of the **Faculty of Electrical Engineering and Computer Science (FEECS)** into the **Faculty of Electrical Engineering and Communication (FEEC).** The Academic Senate of BUT approved the establishment of the faculty to 1st January 2002. The uneasy task of working out new study programmes for both faculties for accrediation was rewarded by unanimous approval of new study programmes for both faculties by the Accreditation

Board of the Ministry of Education of the Czech Republic and its consent with the foundation of the new faculty. In case of the FIT it was a three-year Bachelor's study programme, and a follow-up two-year Master's study programme.

In the first year of the second three-year office BUT was directed by **Prof. Ing. RNDr. Jan Vrbka, DrSc.,** the former Dean of the Faculty of Mechanical Engineering, who was re-elected Rector od BUT for another three years by the Academic Senate of BUT in November 2002. **Doc. Ing. František Zbořil, CSc.,** a member of the Department of Intelligent Systems, was re-elected chairman of the Academic Senate of BUT. **Ing. Jaroslav Švec,** a student of postgraduate doctoral study at the FIT was elected chairman of the Students' Chamber of the Academic Senate of BUT.

In 2003, **Prof. Ing. Tomáš Hruška, CSc.**, the Dean, directed the FIT together with four Vice-Deans. The Academic Senate of the FIT decides about the nomination of the Dean for a three-year office period and expresses its opinion on his/her nomination proposals of Vice-Deans for the same period. The Vice-Deans are in charge of research and creative activities, international and external relations and campus development together with the relevant Dean's Office Departments. The Scientific Board, the Pedagogical Council and the Disciplinary Board are the Dean's advisory bodies. The Faculty Secretary is responsible for faculty organization, development and economic issues, which are carried out by the relevant Dean's Office Departments. In 2003, there were 37 members of the teaching staff and 1328 students in all state-supported study programmes.

The faculty management in 2003:

Prof. Ing. Tomáš Hruška, CSc.	Dean
Prof. RNDr. Milan Češka, CSc.	Vice-Dean, Science and Research
Prof. Ing. Jan M. Honzík, CSc.	Vice-Dean, Public Relations
	Acting Dean
Doc. Ing. Vladimír Drábek, CSc.	Vice-Dean, Education
Ing. Zdeněk Bouša	Vice-Dean, Campus Development

Ing. Zdeněk Bouša worked as the Faculty Secretary. **Doc. Ing. Jaroslav Zendulka, CSc.**, Head of the Department of Information Systems, was also the Chairman of the Academic Senate of the FIT. **Ing. Petr Lampa**, Head of the Computer Centre FIT BUT, worked as the first Vice-Chairman of the Academic Senate of the FIT.

Stanislav Chromčák, and since 30th September 2003 **Zdeněk Vráblík,** students of BUT, worked in the position of the second Vice-Chairman of the Academic Senate of the FIT, and also the President of the Student Union FIT BUT.

Doc. Ing. Josef Schwarz,CSc., represented the Trade Union in the faculty management.

In the second year the faculty consisted of four departments and the Computer Centre
- Department of Information Systems
- Department of Intelligent Systems
- Department of Computer Graphics and Multimedia
- Department of Computer Systems
- Computer Centre

In 2003, the FIT continued tuition in the below-mentioned Bachelor's and Master's study programmes **Electrical Engineering and Computer Science (EI)**, registered in 1999 according to University Education Act. These current study programmes are running out and are likely to continue until the end of the academic year 2006/2007. In 2003, the FIT also provided tuition in the **Ph.D. study programme Information Technology** (DIT) with the Ph.D. qualification. In 2002/2003, a new three-year **Bachelor's study programme Information Technology** was introduced to the faculty. In 2005/2006, a two-year follow-up **Master's study programme Information Technology** will be launched. These new study programmes correspond to the Bologna Declaration on the European Higher Education Area and their structure is fully compatible within Europe.

The study programmes taught at the FIT in 2003:

> *Bachelor's study programme Electrical Engineering and Computer Science*
> *Nominal length of study: 3,5 years*
> *Line of study*　　Computer Science and Engineering

> *Follow-up Master's study programme Electrical Engineering and Computer Science*
> *Nominal length of study: 3 years*
> *Line of study*　　Computer Science and Engineering

> *Master's study programme Electrical Engineering and Computer Science*
> *Nominal length of study: 5 years*
> *Line of study*　　Computer Science and Engineering

> *Bachelor's study programme Information Technology*
> *Nominal length of study: 3 years*
> *Line of study*　　Information Technology (BIT)

> *Doctoral study programme*
> *Nominal length of study*: *3 years* (internal form) or *7 years* (combined form)
> *Line of study*　Information Technology (DIT)

A new follow-up Master's study programme Information Technology will be launched at the FIT in the academic year 2005/2006 with the following lines of study:

- Information Systems (MIS)
- Computer Graphics and Multimedia (MGM)
- Intelligent Systems (MIN)
- Computer Systems and Networks (MPS)

In 2003, 6 Bachelors, and 89 students of the five-year Master's study programme graduated at the FIT. Five students completed the PhD. study programme. 448 new students entered the first year of the internal study, 29 students entered the postgraduate doctoral study, 26 in the internal form and 3 in the combined form of study, and there was one foreign PhD. student who paid his tuition fee.

In 2003, tuition in English was provided for 9 foreign students who paid their tuition fees. Three members of the academic staff, Doc. Dr. Ing. Jan Černocký from the Department

of Graphics and Multimedia, Doc. Dr. Ing. Petr Hanáček, from the Department of Intelligent Systems, Doc. Ing. Josef Schwarz,CSc., from the Department of Computer Systems habilitated, as well as Doc. Ing. Jaroslav Sklenář, CSc., University of Malta.

The most significant events and activities, which influenced the life at the faculty in 2003, were the following:

- Open Day at the FIT BUT, on 15th January, 2003,
- The traditional FIT/FEEC ball organized at a high level in the new BUT Centre, on 24th January 2003
- The visit of Vladimír Mlynář, Minister of Informatics, to the faculty on 13th March 2003
- Work on the innovation of the long-term development of BUT
- Work on the innovation of the long-term faculty intention
- Activities of the pedagogical staff of the FIT related to the new study programmes
- 3 new GACR (Grant Agency of the Czech Republic) projects, in 2003, the total number of GACR projects at the faculty was 11 (6 standard projects and 5 postdoctoral projects),
- 10 new FRVŠ (University Development Fund) projects,
- 1 EU (European Union) project was sent in and admitted (AMI Project, Augmented Multimodal Interfaces, co-ordinated by the University of Edinburgh, with the participation of the FIT) to the 6th framework programme EC. 6 EU projects were worked on at the FIT in 2003,
- Ing. Lukáš Burget: presentation of the MultiModal Meeting Manager (M4) and of the faculty at the IST 2003 Event Milan, Milano, IT, 1st to 5th October 2003,
- Ing. Petr Motlíček, Ph.D.: leading the "Very Low Bit Rate Speech Coding" tutorial at the EuroMasters in Speech and Language summer school, in Barcelona, 7th – 11th July 2003,
- Activities of the AS members, mainly Doc. Ing. Jaroslav Zendulka, CSc., Ing. Petr Lampa, Stanislav Chromčák, and Zdeněk Vráblík focused on faculty organization, development, and economic issues
- Prof. RNDr. Milan Češka, CSc. and Doc. Ing. Zdeňka Rábová, CSc. - ASIS 2003, XXVth International Autumn Colloquium "Advanced Simulation of Systems" , 8th to 10th September 2003,
- Participation at the GAUDEAMUS 2003 Fair with presentations of new study programmes
- Activities of pedagogical staff connected with information sessions at different types of secondary schools
- Activities of Doc. Ing.Vladimír Drábek, CSc. and Ing. Miloš Eysselt, CSc. concerned with defining the mechanism for internal and inter-faculty distribution of funds for tuition (especially FIT / FEEC) and mutual payment for tuition
- Activities of Prof. Ing. Jan M. Honzík, CSc., Vice-Dean for Public Relations, related to his office of the National Co-ordinator for EUA (European Association of Universities), namely to ECTS/DS the nation-wide consultation group for Socrates/Erasmus, credit system ECTS and Diploma Supplement DS
- Activities of Prof. Ing. Jan M. Honzík, CSc. aimed at the completion of the current RP "Research in Information and Control Systems at the FIT",

- Activities related to the development programmes of the Ministry of Education preparing the Bachelor's programme „Information Technology" and its distance form for accreditation, directed by Prof. Ing. Jan M. Honzík, CSc.,
- Organization of CSEW 2003 (Computer Science Education Workshop), a meeting of departments and faculties involved in computer science both from the Czech Republic and Slovak Republic, from 6th to 8th November 2003, Přímětice u Znojma ,
- Monograph on evolvable hardware published by Springer Verlag (Ing. Lukáš Sekanina, Ph.D.),
- Foundation and organization of a seminar for Ph.D. students from the Czech Republic and the Slovak Republic, called PAD 2003 (on computer architecture and diagnostics), Zvíkovské Podhradí, 24th to 26th September 2003, and the start-up of Prof. Ing. Jan Hlavička, DrSc. Award
- Design of the REHITECH European Project (Reconfigurable Embedded Systems, High-Level Specification and advanced Techniques for Design and Test) in October 2003 aimed at creation of Network of Excellence, under selection procedure at present,
- Design of the COST European project (Making Component-based Development Cost-effective for SMEs) in November 2003 (the category of Cooperative Research), under selection procedure at present,
- Co-organization of the MOSIS 03´ conference (Modelling and Simulation of Systems), Brno, 28th to 30th April 2003, organized by FEEI VŠB-TU Ostrava,
- Co-organization of the ISIM´03 conference (Information Systems Implementation), Brno , 28th to 30th April 2003, organized by FEEI VŠB-TU Ostrava,
- Microsoft Day at the FIT BUT in Brno, 22th May 2003,
- Starting the student section of the FIT Information System (Tuition).

Awards in 2003

The Rector's Award conferred to **Ing. Roman Lukáš** for outstanding results in his scientific activities and contribution to the development of science and Ph.D. studies at Brno University of Technology, and to **Doc. Dr. Ing. Jan Černocký** in the category of young academics (under the age of 35) for outstanding pedagogical and scientific achievements.

A good position in the 7th year of the   **AFCEA student's** competition for the best work in the area of information a nd communication systems. Three contributions, namely those by **Ing. Vladimír Čech, Ing. Josef Novosád and Ing. Michal Španěl,** students of the FIT BUT, ranked among the five best.

Doc. Ing. Zdeňka Rábová, CSc., RNDr. Jitka Kreslíková, CSc. and Doc. Dr. Ing. Pavel Zemčík were appreciated for their active support of the AFCEA student's competition.

Ing. Vladimír Kutálek and **Ing. Daniel Mika** were awarded the **Siemens Award** (for Ph.D. students) for their outstanding results in scientific research, study and pedagogical acivity. **Ing. Lukáš Sekanina, Ph.D.** received the **Siemens Award** for his excellent dissertation.
Ing. Lukáš Sekanina, Ph.D. was awarded **Josef Hlávka Award 2003** for his research results.

Ing. Lukáš Sekanina, Ph.D. was awarded another prize for the best presentation at the conference Evolvable Systems: From Biology to Hardware ICES 2003 and for his research results.

2003 was the second year of existence of the FIT. The main goal was the introduction and implementation of the new Bachelor's study programme with more than 600 students admitted. The completion of restructuring the management personnel at the Dean's office and gaining and training new high-quality staff is also an important step.

On behalf of the management of the Faculty of Information Technology BUT I wish all members of academic staff, students, and all employees of the faculty favourable working conditions, and success in their efforts for a further development of the FIT. At the same time I thank all employees who contributed to the functioning of the FIT in its second year of existence, for the extraordinary efforts devoted to the foundation of the FIT, and for mutual understanding, solidarity, and wisdom they showed when seeking solutions to difficult problems.

Prof. Ing. Tomáš Hruška, CSc.
Dean of the FIT BUT

AREAS OF ACTIVITIES AT THE FIT IN 2003

II.1 Study Programme

First-Level of Master's Study and Bachelor's Study Programme

At the end of 2003, there were 1329 students studying at the FIT in all study programmes including the doctoral one. See the following table:

Specialization	Number
EI-MGR-5, CSE	512
EI-MGR-3, CSE	16
IT-BC-3	697
EI-BC-3, CSE	14
IT-DR-3	102
Total	1329

The number of applicants for the study programme „Information Technology" can be seen in the last two lines of the following table in connection with the numbers of applicants for CSE – Computer Science and Engineering (VTI in Czech) in the previous years. As the new study programme Information Technology is linking up well to the tradition of the running out study programme Electrical Engineering and Computer Science with the specialization Computer Science and Engineering (CSE), we can compare the numbers of students interested in the specialization in the following table:

Academic year	Applicants	Admitted
1996/97	229	120
1997/98	251	130
1998/99	245	140
1999/00	212	120
2000/01	200	129
2001/02	468	280
2002/03	2145[*)]	340
2003/04	1718[*)]	463

Numbers with [*)] show the number of applications. Until the academic year 2001/2002 the students had not been specialized sooner than at the end of the first semester, in fact, only students who had already been admitted to the faculty were specialized.

1700 applications for admission to the Bachelor´s study programme Information Technology (and 18 for the follow-up Master´s study programme EI-CSE) were sent to the FIT BUT by the 31st March 2003.

The entrance examination took place on 9th and 11th June. There was a back-up term on 9th July 2003.

1384 applicants turned up to sit for the entrance examinations, which makes 81.41% of the total number.

The written exam took place in 6 turns, each of them consisted of 9 groups with the same tasks set, there was only one group on the back-up date.

There was only one written examination in mathematics (20 tasks, 800 points max.) and in informatics (5 tasks, 200 points max). The written examination took 75 minutes.

The maximum number of points was 1000, the achieved number of points divided by 10 was published.
The number of points necessary for admission was 63,2 out of 100.

The limit for "pass" was the total of 25 points minimum.
The results of the entrance examination were published 2 hours later on the official notice board and on the FIT BUT Web page. The applicants received a notice about whether they had been admitted or not by a post-office special delivery.

Admitted: 635
admitted without the secondary school-leaving certificate: 11
Refused (lack of capacity): 580
Failed: 104
Absent: 316
Admitted without the entrance examination: 54
Matriculation: 25th to 26th June and 7th July 2003.
By 15th July 2003 448 students enrolled (IT study programme).

Applicants for admission to the FIT were successfull by 37.3% (21% in the previous year).

Comprehensive Examinations and the Second-Level Study

The limit of weighted study average, which makes an exemption from the examination possible, was set to be 2,5 in 2002/03. The total of 7 students applied for the comprehensive examination, 7 students came to sit for it, and 7 students passed it. The structure of the oral part of the **Final State Examination** was based on two themes: Hardware and Software. Besides the defence of the thesis each student had to answer one question from each of the two themes. 95 undergraduates passed the Final State Examination, 6 of whom were Bachelors.

Number of Graduates in Computer Science and Engineering

Specialization	1999	2000	2001	2002	2003
CSE	77	96	107	100	95

Doc. Ing. Vladimír Drábek, CSc.
Vice-Dean for Education

II.2 Creative Activities, Science, Research and Postgraduate Doctoral Study

The new faculty continued in the tradition of basic and applied research in the area of computer hardware, software, prototypes of computer systems, and application of information technology in practical life. The main research areas at the FIT BUT in 2003 were the following:

- Information Systems

- System Modelling and Simulation

- Artificial Intelligence

- Computer Graphics and Multimedia

- Computer Architecture

- Speech Processing

- High Performance Computing

- Petri Nets

Apart from the research activities at the FIT, which have already been listed in the introductory chapter as important events in 2003, some more events which could influence the faculty development can be mentioned here:

- Activity of the co-ordination group that helps to increase the number of grants and projects the faculty will be involved in, including the EU ones.
- A special CD offering co-operation in research and development (16 contributions representing the faculty). The offer will be published on the AV ČR Technological Centre web http://www.tc.cz/projekty/circ/
- Publication activities of the faculty (1 monograph, 30 articles in journals and 146 contributions in conference proceedings).
- Work of the faculty members in international scientific and research organizations, editing boards of journals and programme committees of conferences (see paragraphs "Membership in Organizations and Societies" in chapters of this Annual report which are dedicated to the individual departments).
- Organization of regular professional seminars with the participation of all faculty departments.
- Further development and use of the information system of the faculty, which helps to improve the quality of the research infrastructure. (A substantial part of this report has also been generated as an output of the mentioned information system.)

II.2.1 Habilitations in 2003

Name: Doc. Ing. Josef Schwarz, CSc.
Department: UPSY FIT BUT
Area: Computer Science and Engineering
Date: 10th June 2003

Name: Doc. Dr. Ing. Jan Černocký
Department: UPGM FIT BUT
Area: Computer Science and Engineering
Date: 10th June 2003

Name: Doc. Dr. Ing. Petr Hanáček
Department: UITS FIT BUT
Area: Computer Science and Engineering
Date: 21st November 2003

Name: Doc. Ing. Jaroslav Sklenář, CSc.
Department: Department of Statistics and Operations Research, University of Malta
Area: Computer Science and Engineering
Date: 21st November 2003

II.2.2.1 The European Union Projects at the FIT in 2003

Agency	Theme	Project Code	Name of the Project	Total in thous. CZK
EU-HLT	IST	2001-34485	Multi Modal Meeting Manager	2 726
EU	IST	1999-10003	SPEECON - Speech driven interfaces for consumer applications	241
				2 967

II.2.2.2 The Grant Agency (GAČR) Projects at the FIT in 2003

GAČR	Name of the Project	Total thous. CZK
102/01/1531	Formal methods of diagnosing digital circuits – testable design verification	495
102/01/1485	Medium for development, modelling and application of heterogeneous systems	604
102/02/0507	Computer graphics algorithms with FPGA support	540
102/02/0124	Voice technologies for support of information society	256
102/02/0503	Parallel system performance prediction and tuning	249
102/02/1032	Embedded control systems and their inter-communication	244
102/01/D141	Development in the area of creating FEM models of human tissues for biomechanics applications	203
102/02/D108	Data-driven and anthropic coding and recognition of speech	246
102/03/P176	Formal approach to planning tests of digital circuits	185
102/03/P004	Evolvable hardware based applications design methods	201
102/03/D211	Advanced methods of automatic verification of parametric and infinite-state systems	40
Total		**3 263**

II.2.2.3 The University Development Fund (FRVŠ) Projects at the FIT in 2003

FRVŠ MŠMT	Theme	Name of the Project	Total Thous. CZK
821/2003	F1	Modelling and simulation for the Master's study programme	92
824/2003	G1	Association rule discovery in relational databases	84
828/2003	G1	Dynamic object model in interpreted systems	97
829/2003	G1	State space reductions for object oriented Petri nets	107
830/2003	G1	Image data description for content based retrieval in medical databases	112
833/2003	G1	Design of environment for creation of heterogeneous models	119
834/2003	G1	The methods of test controller design for embedded systems	90
835/2003	G1	Biometric security systems	150
838/2003	G1	Tools for support of formal specification and verification of UML based diagrams	99
842/2003	G1	A very low bit rate speech coder	112
Total			**1 062**

II.2.2.4 Research Project at the FIT in 2003

Research project MSM262200012, investigator: prof. Ing. Jan M. Honzík, CSc.

Research project	Name of the project	*Total* thous. CZK
MSM262200012	Research in information and control systems at the FIT	5546
MSM262200012	Research in information and control systems at the FEEC DCI	1300
Total		6846

The research project is aimed at research of theoretical and applied methods of design, verification, implementation and evaluation of information and control systems and their components covering both hardware and software. The research is directed into three areas, which correspond to logical levels of the architecture of the control systems and the management support systems:

- Area of information systems and support to the management level
- Area of communication, control algorithms and process and control systems
- Data acquisition and evaluation

The whole research field is divided into the following eight areas, which are the subjects and partial aims of the research project:

- Methods and tools for system modelling
- Technology and design of information systems
- Computer graphics and multimedia in information and control systems
- Architecture of software and hardware in imbedded systems
- Computer-aided control
- Computer networks and systems of industrial automation
- Computer vision
- Sensors, digital processing and computer analysis of measured signals

Seven research teams were involved in research of these individual areas (Computer graphics and Computer vision together).

The research teams included 6 professors (3000 hrs.), 18 associate professors (8700 hrs.), 48 other staff (19200 hrs.) and 67 doctoral students.

The main target for the coming research period is to enrich the contemporary standard of knowledge in the explosively developing discipline of information and industrial technologies through new ideas and innovations. This is supported by the structure of the research teams, their management and regular evaluation.

The project management headed by the investigator uses its own methodology to guarantee stable quality of the research work under changing rules, and provides general information for internal evaluation and comparison of all members of the research team. One

part of this methodology is a detailed internal annual report. (http://www.fit.vutbr.cz/research/vzamer).

An important research activity in 2003 was the preparation of a new research plan (RP). Its main features were formed in the second half of the year.

Discussions of the most significant staff members lead to a design and length of the RP, and in the first place its size and staffing. The consideration resulted in the following main features:

- The new RP will form a continuation of the present RP and will be proposed for a 5-year period,
- The new RP will be the only one submitted by the FIT,
- It will be an inter-faculty RP of middle size.

The name of the RP had been discussed thoroughly. The original proposal "Advanced Information Technology" seemed to be too general and was later changed to "Modelling and Optimization of Computer-Based Application-Specific Systems" which fits better the main goals of the RP and at the same time involves the most traditional and most successful research areas of the former department and the present faculty.

The administrator of the proposed RP is the Faculty of Information Technology, Brno University of Technology, the RP was given an identification number MSM 0021630505 and Prof. Ing. Jan M. Honzík, CSc. is the investigator.

The formation of the staff of the proposed RP had also gone through a complicated development. The co-operation with the FEEC BUT was reduced by two researchers. On the other hand the co-operation with a research group from the Faculty of Business and Management (FBM) was re-inforced significantly. Its orientation, mainly in the area of information systems and intelligent systems, has rather an application character: its main task is application and verification of theoretical results and models created in the framework of the RP.

Young and promising postdoctoral research workers played an important part in the formation of the goals of the RP and of the structure of the research team. These young research workers are supposed not only to contribute to the successful completion of the research plan but also get important positions within the research team and, in future, form a new generation which will contribute to the completion of the above-mentioned RP as well as initiate new scientific and research projects and occupy leading positions in them.
 A large number of members of the FIT academic and technical staff aided by some researchers from the FBM worked on the design. Several months of intensive preparatory work proved to be highly demanding for the staff. The main goal was to present a high-quality research plan without the least, even formal faults.

The efforts were compensated by informal evaluation done by the BUT Scientific Board, where the presented RP proposal was evaluated to be one of the two best among 18 RPs within BUT.

II.2.2.5 Survey of Other Projects at the FIT in 2003

Agency	Theme	Project Code	Name	Total Thous. CZK
CESNET		045/2003	Online structure streaming in high-speed network	274
CESNET		049/2003	Collaborative virtual environments	1 022
CESNET		2003	6NET	99
BARRANDE		2003-041-1	Language independent low bit rate speech coding	23
MVČR	RNI	23002	Co-operation of universities to support the state struggle against computer crime	95
MŠMT	MŠMT DCI	20159	Preparation of the distance form of the Bachelor's study programme "Information Technology" for accreditation. Developing support for specified study programmes	7 000
Total				**8 513**

II.2.2.6 Survey of external sources in funding creative activities at the FIT in 2003

Source	Project	Number of projects	Total Thous. CZK
MŠMT	Research projects	1	5 546
MŠMT	FRVŠ projects	10	1 062
MŠMT	Other MŠMT projects	1	7 000
GAČR	GAČR projects	11	3 263
EU	Projects of the 5th framework programme of the EU	2	2 801
MVČR		1	95
Barrande		1	23
Others		3	1 395
Total			**21 185**

Funding creative activities at the FIT from external sources in 2003
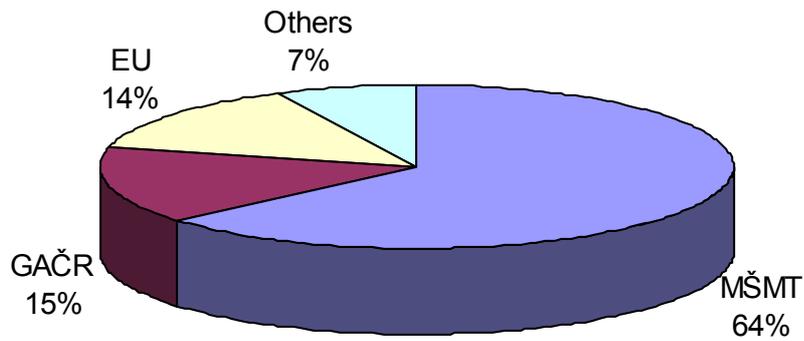
II.2.3. Ph.D. Doctoral Study Programme

The doctoral study programme Information Technology with one specialization of the same name was started at the same time as the FIT BUT – 1st January 2002. The first step meant accepting a part of students specialized in Cybernetics and Computer Science from the FEECS. In June 2002 the first admission process took place.

The content and organization of the study resumes the ideas and good experience with the education of Ph.D. students at the FEECS BUT. The main tasks solved in this area in 2003:

- Offer of a wide choice of courses at a high professional level, a well-balanced combination of theory and applications of IT, and availability of detailed descriptions od the individual courses (in Czech and English) on the Internet for both present and future students.

- Co-operation with the FEEC BUT and the Faculty of Informatics, Masaryk University in Brno as far as the offer of courses, organization of the State Doctoral Examinations, and defenses of dissertations are concerned

- Preparatory work for two GAČR doctoral grants in co-operation with the Faculty of Informatics, Masaryk University in Brno
- Consistent checking of the individual study plans of Ph.D. students followed by differentiated payment of extra scholarship money.
- Record of dissertation theses and offer of new themes through the Faculty Information System.
- Ph.D. students participation in regular professional seminars at the faculty

Ph.D. study statistics

Year	Type of study	Number of students
1.	internal	27
	combined	3
2.	internal	17
	combined	0
3.	internal	23
	combined	1
4.	combined	10
5.	combined	9
6.	combined	9
7.	combined	4
Total		**103**

II.2.3.1. Ph.D. thesis defended in 2003

Ph.D. student:	Ing. Jiří Očenášek
Study area:	Information Technology
Thesis:	Parallel Estimation of Distribution Algorithms
Supervisor:	Doc. Ing. Josef Schwarz, CSc.
Defended on:	28th1January 2003

Ph.D. student:	Ing. Zdeněk Korčák
Study area:	Information Technology
Thesis:	Signature files with variable-length signatures
Supervisor:	Doc. Ing. Jaroslav Zendulka, CSc.
Defended on:	3rd February 2003

Ph.D. student:	Ing. Azeddien M. Sllame
Study area:	Information Technology
Thesis:	Design Space Exploration of High-Performance Digital Systems
Supervisor:	Doc. Ing. Vladimír Drábek, CSc.
Defended on:	21st February 2003

Ph.D. student:	Ing. Petr Kotásek
Study area:	Information Technology
Thesis:	DMSL: The Data Mining Specification Language
Supervisor:	Doc. Ing. Jaroslav Zendulka, CSc.
Defended on:	26th June 2003

Ph.D. student:	Ing. Petr Motlíček
Study area:	Information Technology
Thesis:	Modelling of Spectra and Temporal Trajectories in Speech Processing
Supervisor:	Doc. Dr. Ing. Jan Černocký
Defended on:	24th November 2003

Prof. RNDr. Milan Češka, CSc.
Vice-Dean for Science and Research

Prof. Ing. Jan M. Honzík, CSc.
Research leader of the RP MSM262200012

II.2.4. Student Creativity

The student creativity at the FIT was based on a long tradition and experience. Student conferences and competitions in computer science and information technology have been organized annually since 1972.

Though the FEECS split into the FIT and FEEC, the competition is held under the name STUDENT EEICT (Electrical Engineering, Information and Communication Technologies) for students of both faculties.

In 2002, the student conference took place on 25th April at the premises of BUT Under Palacky Hill. It was opened by two Deans: Prof. Ing. Tomáš Hruška, CSc., (FIT) and Prof. Ing. Radimír Vrba, CSc., (FEEC) in the presence of Prof. RNDr. Ing. Jan Vrbka, Dr.Sc., Rector of BUT, and Doc. Ing. Eva Münster, CSc., Vice-President of the Czech Council of Higher Education Institutions and President of a committee for student creativity. Presentations of leading companies, which sponsored the conference, were followed by a display and evaluation of competing posters by doctoral students.

The students of the FIT Master's study programme defended their work in the following specializations: Information Systems, Theoretical Informatics, Computer, Intelligent and Graphics Systems. The evaluation committees were formed by academics, sponsors, and representatives of the Student Union. After presentations the committees chose the best contributions and suggested the financial reward for the individual authors. Thus the academic approach, attractiveness for industry and students' viewpoint were incompassed. There were 22 competitors from the Ph.D. study programme and 26 students of the Master's study programme of the FIT present. All contributions were successfully reviewed and were shortened and published in the Proceedings of the Conference. The electronic version of the proceedings can be found on the Internet and CDs.
The final ceremony took place after all committees had completed their work and the Rector Prof. RNDr. Ing. Jan Vrbka, DrSc. and the Vice-Rector Prof. Ing. Zbyněk Raida, CSc. awarded the prizes to the winners. Sponsoring companies then awarded prizes to successful authors.

Let us hope that the students' competitions will take place in future as a unique motivation for students'creativity work.

The importance of the student creativity is extremely high in case of our young faculty as a considerable number of winners enter the Ph.D. study programme and several most outstanding graduates become new young members of the academic staff of the faculty.

Doc. Ing. Zdeňka Rábová, CSc.

II.3 International Relations

International activities at the FIT are dealt with by the following group: the Vice-Dean Prof. Ing. Jan M. Honzík,CSc., Mrs. Michaela Studená, Assistant for Public Relations, and a teacher with considerable international experience (Doc. Dr. Ing. P.Zemčík). International activities are focused on support of international mobility of both students and teachers, on organizing and offering tuition to foreign students who pay their tuition fees and on information and reference service. In 2003, there were bilateral agreements between the faculty and 12 foreign universities in the framework of SOCRATES ERASMUS Programme and 17 students spent some time at study stays abroad.

Each student's language competence for the particular study stay is highly emphasized and tested at a competition, in co-operation with the Department of Languages, the Faculty of Electrical Engineering and Communication, BUT, (PhDr. Marcela Borecká).

Dr. Ing. Přemysl Kršek lectured and two students (Petr Šebesta and Václav Šimek) participated in the Summer School in the framework of the SOCRATES Project "Intensive Program Project in Informatics and Multimedia" at Université de la Rochelle, La Rochelle (France).

The following table lists foreign partners who had active bilateral agreements with the FIT within the framework of SOCRATES.

Country	University	Erasmus code
Finland	Helsinki University of Technology http://www.hut.fi/English/	FI ESPOO 01
	Lappeenrannan University of Technology http://www.lut.fi/english.html	SF LAPPEEN 01
	University of Joensuu http://www.joensuu.fi/englishindex.html	SF JOENSUU 01
France	Ecole Superieure d`Ingenieurs en Electrotechnique http://www.esiee.fr/	F NOISY 02
	Université de la Rochelle http://www.univ-lr.fr/	F LA-ROCH08
The Netherlands	Utrecht University http://www.uu.nl/uupublish/homeuu/homeenglish/1757main.html	NLUTRECHT01
Portugal	Universidade de Trás-os-Montes e Alto Douro http://www.utad.pt	P VILA-RE 01
Austria	Graz University of Technology http://www.tugraz.at	A GRAZ 02
Spain	Manuel Barrio Solórzano, Depto de Informática http://www.uva.es/	E VALLADO 01
Great Britain	University of Surrey http://www.surrey.ac.uk	UK GUILDFO 01
	University of Bristol http://www.bris.ac.uk	UK BRISTOL 01
	University of Sheffield http://www.shef.ac.uk	UK SHEFFIE 01

Student mobilities at the FIT - ERASMUS and others

Stays abroad:

Name	Stay	University
Čepela Jan	01/2003 – 05/2003	UK, University of Surrey
Karafiát Martin, Ing.	01/2003 – 09-2003	UK, University of Sheffield
	10/2003 – 12/2003	UK, University of Sheffield (apart from ERASMUS)
Zatloukal Ivo	08/2002 – 08/2003	Finland, Lapeenranta University of Technology
Drahanský Martin, Ing.	01/2003 – 12/2003	Germany, Universität Siegen (apart from ERASMUS)
Kubíček Vladislav, Ing.	01/2003 – 06/2003	France, Université Pierre et Marie Curie, French Government Grant (apart from ERASMUS)
Křena Bohuslav, Ing.	05/2003 – 07/2003	UK, The University of Edinburgh (apart from ERASMUS)
Galbavý Lubomír	09/2003 – 02/2004	Austria TU Graz
Pallich Jiří	10/2003 – 02/2004	Austria TU Graz
Bieber Boleslav	09/2003 – 12/2003	Finland TU Helsinki
Vokál Radek	09/2003 – 12/2003	Finland TU Helsinki
Glembek Ondřej	08/2003 – 12/2003	Finland, University of Joensuu
Gunia Martin	08/2003 – 12/2003	Finland, University of Joensuu
Kobliha Miloš	08/2003 – 05/2004	Finland, Lapeenranta university of Technology
Šebesta Petr	09/2003 – 06/2004	France, ESIEE Paris
	06/2003	France, Universite de la Rochelle
Rudolfová Ivana	09/2003 – 01/2004	UK, University of Bristol
Kotek Milan	09/2003 – 02/2004	Portugal, UTAD
Křivánek Martin	09/2003 – 02/2004	Portugal, UTAD
Čaderský Pavel	09/2003 – 08/2004	The Netherlands, Hogeschool van Utrecht
Rozsnyó Daniel	09/2003 – 08/2004	The Netherlands, Hogeschool van Utrecht
Machát Ondřej	09/2003 – 01/2004	Sweden, Uppsala Universiteit
Schwarz Petr, Ing.	01/2003 – 06/2003	USA, OGI, Oregon (mimo ERASMUS)
Matějka Pavel, Ing.	01/2003 – 06/2003	USA, OGI, Oregon (mimo ERASMUS)
Šimek Václav	06/2003	France, Universite de la Rochelle

Unlabelled stays: Finance SOCRATES/ERASMUS, MSMT CR and the mobility fund of BUT

Visiting students:

Name	Stay	University
Olli Alkkiomäki	09/03 - 01 / 04	Finland, LUT Lappeenranta
Olivier Lai Khan Ton	04 – 07 / 2003	France, ESIEE Paris
Claire Yvonneau	04 – 07 / 2003	France, ESIEE Paris
Efrain Pardo	10/03 – 06/04	México, graduated from TEC de Monterrey

Prof. Ing. Jan. M. Honzík, CSc.
Vice-Dean for Public Relations

II.4 Lifelong Education

Doc. Ing. Jiří Kunovský, CSc. contributed to the programme of the Third Age University (U3V) in the first semester by lecturing and organizing a computer workshop, and together with three doctoral students did his teaching in computer science in the first, second and third semesters.

He presented the experience in teaching the U3V courses at BUT in his paper at a conference in Spain. He is the author of the syllabus of a new, attractive U3V course "Digital photography and computer graphics". This course will be launched in 2004/2005.

The second stage of the three-year MSMT project "Preparation of the Distance Form of Bachelor's Study Programme Information Technology for Accreditation" was worked on. This study programme focused on e-learning and computer-aided technologies can also be used for lifelong education in future.

Some staff members of the FIT also provided a seminar in informatics for the fourth-year students of the secondary school in Kpt. Jaroše Street (on 29th January 2003) and they also provided all-year tuition of "Selected Parts of Informatics" for the secondary school in Vídeňská Street, Brno.

Within the Government Policy on IT in Education, the FIT was accredited in 2003 for the P preliminary training module and started a series of P and Z educational courses in close co-operation with ApS Brno s.r.o. Seven training courses for 8 schools were organized and 70 elementary and secondary school teachers were trained. In the summer semester of 2002-2003, a pilot set of courses was realized in co-operation with IT Training Centre and the Microsoft Co. The aim of the courses was gaining deeper practical knowledge and experience with Microsoft-based systems and networks, in the first place with the MS Windows 2000 operating systems. In 2003/04 , students of the 2nd year of the Bachelor study programme are offered 5 courses, which will also prepare them for achieving MCP – Microsoft Certified Professional, an internationally recognized certificate. There is great interest in the courses, which surpasses the existing capacity of 80 students a semester.

Prof. Ing. Jan. M. Honzík, CSc.
Vice-Dean for Public Relations

II.5 Dislocation, Modernization, and Development in 2003

Unlike in 2002, in which a whole number of provisional measures were taken in the dislocation and building at the FIT to manage the tuition and stabilize the Božetěchova 2 premises, in 2003 the managements of BUT and FIT concentrated on dislocation and stabilization of the FIT in Božetěchova 2 and Božetěchova 1 premises. An area planning project was completed and in late 2003 detailed area development was started by BUT. The project includes architectural concept of the relevant area as well as its basic layout in accordance with the FIT building programme. It also defines the basic technological standard specifications for the equipment of buildings with respect to teaching and to the minimum costs of operation (intelligent building).

As part of the preservation of architectural heritage, reconstruction of the last southern seclusion was started with the estimated time of completion in 04/2004. Reconstruction and statical assurance of the mortuary (one of the oldest and best preserved parts of the Cartesian monastery) was also started.

The temporary layout of the second part of the main courtyard was completed and a self-service snack bar was set up in Božetěchova 2 until the definitive refectory is constructed in the area of Božetěchova 1. The Computer Centre was adapted and improved through a barrier-free access, which enables students with physical disabilities to reach the computer lecture halls in the area of Božetěchova 2.

It is the Vice-Dean Ing. Zdeněk Bouša, who is in charge of this extremely important and demanding task, i.e. the task of the faculty development and finance.

Ing. Zdeněk Bouša
Vice-Dean for Campus Development

II.6. Library at the FIT

The library has been there since the Department of Computer Science and Engineering was founded in 1964. At present it is located in two rooms in the left wing of the premises in Božetěchova Street. It contains more than 11000 books, 1000 diploma theses, and several tens of dissertations. Subscriptions of 60 professional journals have been maintained. There are 12 seats in the study room. Electronic catalogues of books and journals are kept in the OpenAccess system, in 2003, a transition to the central BUT records in Aleph was being carried out.

At the end of 2003, reference books for the Bachelor's study programme and books recommended by the Student Union, all worth cca 600,000 CZK, were added , in accordance with the requirements of the pedagogical staff.

In 2004, the library bookstock for the subjects of the Master's study programme will be reinforced in the same manner.

Wtihin the future reconstruction of the area of Božetěchova 2, a new FIT library with capacity, technical equipment and staffing corresponding to the FIT development will be built. The new library will be finished in 2006-2007.

Doc. Dr. Ing. Jan Černocký

II.7. Annual Report - the Academic Senate of the FIT BUT in 2003

Academic Senate

In 2003, the Academic senate comprised:

Doc. Ing. Jaroslav Zendulka, CSc.	*Chairman*
Ing. Petr Lampa	*Vice-Chairman and*
	Chairman of the Chamber of the Academic Staff
Stanislav Chromčák *(up to 9th June 2003)*	
Zdeněk Vráblík *(from 30th Sept 2003)*	*Vice-Chairman and*
	Chairman of the Student Chamber

Chamber of Academic Staff

Ing. Daniel Cvrček, Ph.D. (UIFS) – *up to 31st July 2003*
Ing. Vladimír Janoušek, Ph.D. (UITS)
RNDr. Jitka Kreslíková, CSc. (UIFS) – *from 30th Sept 2003*
Doc. Ing. Jiří Kunovský, CSc. (UITS)
Ing. Petr Lampa (CVT)
Doc. RNDr. Alexander Meduna, CSc. (UIFS)
Dr. Ing. Petr Peringer (UITS)
Doc. Dr. Ing. Pavel Zemčík (UPGM)
Doc. Ing. Jaroslav Zendulka (UIFS)

Student Chamber

Stanislav Chromčák (Master's programme EI, spec. CSE) – *up to 9th June 2003*
Stanislav Holenda (Master's programme EI, spec. CSE) – *from 10th June 2003*
Vlastimil Kaluža (Master's programme EI, spec. CSE)
Ing. Bohuslav Křena (Ph.D.programme IT)
Marek Kyrsch (Master's programme EI, spec. CSE)
Zdeněk Vráblík (Master's programme EI, spec. CSE)

AS FIT Committees

Legislative Committee

Stanislav Chromčák – *up to 9th June 2003*
Stanislav Holenda – *from 10th June 2003*

Vlastimil Kaluža
doc. Ing. Jiří Kunovský, CSc. - Chairman
Ing. Petr Lampa

Economic Committee

Ing. Daniel Cvrček, Ph.D. – *up to 31st July 2003*
RNDr. Jitka Kreslíková, CSc. – *from 30th Sept 2003*
Ing. Bohuslav Křena

Ing. Petr Lampa – *Chairman*
Zdeněk Vráblík
Doc. Ing. Dr. Pavel Zemčík

Activities of the AS FIT in 2003

The Academic Senate of the FIT elected after the Faculty of Information Technology had been established (on 7th January 2002), met in 2003 at seven regular meetings with an average attendance of 88%. All meetings had a quorum.

Most of the meetings dealt with legislative and economic topics, which are the resposibility of the ASs according to the University Education Act. As far as the internal regulations are concerned, the Dean's Regulations completing the Study and Examination Regulations of BUT and Dean's Regulations concerning the Admission Process and requirements for admission to the Bachelor's study programme at the FIT in 2004 were agreed on, as well as amendments of Admission Rules for foreign applicants to the FIT BUT study programmes in English. The latter document legislatively regulates an area that has not been systematically treated yet.

The Academic Senate of the FIT and its management proposed some amendments of the Statute of BUT in the paragraph dealing with tuition fees laid on students who surpass the standard length of the study programme in question plus one year.

The Academic Senate agreed on the Annual Report of the FIT in 2002 and approved the FIT budget for 2003. The AS checked the fulfilment of the FIT budget in 2003 in its meeting in early November.

The Academic Senate also discussed and approved the Annual Report on the Activities of the FIT and updated the Long-Term Intention of the FIT BUT for 2004.

A total of 20 decisions, out of which 8 concerned internal regulations and 4 economic issues, were approved . Other decisions referred to the election of the chairman of the Student Chamber of the AS FIT, complementation of the Committees of the AS, of the FIT Scientific Board, etc. The Student Chamber actively participated in all activities of the AS FIT. After the graduation of Stanislav Chromčák the AS was completed by an elected replacement member Stanislav Holenda. As Stanislav Chromčák was the Chairman of the Student Chamber of AS FIT, a new Chairman had to be elected – it was Zdeněk Vráblík.

The composition of the Chamber of the academic staff also went through some changes. Ing. Daniel Cvrček, Ph.D. resigned to his membership in the AS due to his leaving for a stay in Great Britain, and the AS was completed by the first regularly elected alternate member, RNDr. Jitka Kreslíková, CSc.

The Legislative Committee met twice to discuss the proposals of internal regulations of the FIT, and the Economic Committee of the AS FIT met once to discuss the FIT budget for 2003.

Doc. Ing. Zdeňka Rábová, CSc., nominated by the AS FIT and approved by the AS BUT, was the FIT deputy in the Czech Council of Higher Education Institutions and worked there in the sphere of student creativity.

More detailed information about the individual sessions of the AS FIT can be found in the websites (http://www.fit.vutbr.cz/FIT/AS/), which form part of the Faculty Information System.

Doc. Ing. Jaroslav Zendulka, CSc.

Chairman AS FIT

II. 8. Student Organizations

The Student Chamber of the Academic Senate of the FIT represents the students of the FIT, it is elected by the academic staff and co-operates closely with the Student Union of the FIT.

The Student Chamber AS FIT is an interest group of the FIT students. It is here to inform students about important activities and events at the FIT, about all that is important for their successful study and life in Brno. It contributes to various events of the FIT or BUT.

Activities of the Student Chamber of the Academic Senate (SCAS) of the FIT in 2003

Student senators regularly attended the AS FIT meetings. They participated in the Economic and Legislative Committees of the Senate. The SCAS FIT members took part in a meeting of representatives of the Student Chambers of ASs of faculties of electrical engineering and faculties of information technology, which was held in Liberec. Preferential allocation of points for accommodation in halls of residence was another important event where the members of the SCAS FIT co-operated with the faculty management - they passed a resolution concerning allocation criteria, which were presented to the Dean. The SCAS FIT delegated its representatives to the individual work sections of the SCAS BUT.

Activities of the Student Union (SU) FIT in 2003

The members of the SU participated in the FIT Open Day, they organized the evaluation of study courses by students, and they contributed to the organization of the second joint ball of the FIT and FEEC. The members of the SU participated in and promoted a meeting that informed the FIT students about various study stays in foreign institutions. They also worked in committees of the students´creativity conference. In 2003, the students helped to promote the faculty at the Gaudeamus Fair. In 2003, for the first time, the SU prepared a brochure containing useful information on the study start-up for the first-year students. The SU representatives also participated as board members in enriching the FIT library resource system. The Student Union, together with students who live in Hotel Božetěchova, initialized the connection of the lodgings to the BUT computer net.

Zdeněk Vráblík,
Chairman SU FIT

DEPARTMENT OF INFORMATION SYSTEMS

The Department of Information Systems provides tuition in the Master's study programme with the specialization **Information Systems**, which covers programming, formal languages and translators, database and information systems, the Internet and distributed applications. The aim is to inform students about theory, technology and methods of information systems development and teach them to develop such systems based on modern tools, methods and technologies. Apart from that the Department also provides tuition in a large number of basics in the Bachelor's study programme **Information Technology** and offers subjects in the Ph.D. study programme **Information Technology**.

Research activities of the Department covers database technologies, information systems implementation, control of SW projects, theory of formal languages and translators. At present, the Department concentrates on:

- Object-oriented modelling, object-oriented database systems, database design

- Knowledge discovery in databases

- Formal specifications and design of computer-based systems

- Information system implementation

- Software metrics and control of software projects

- Cryptographics protocols and security mechanisms

- Formal languages and

- Functional languages

The lectures in most courses are accompanied with projects or laboratory sessions, where students acquire necessary skills and useful experience with the latest SW packages and hardware units, team work and project management.

Staff

Head of Department
Zendulka Jaroslav, Doc. Ing., CSc.
Deputy Head of Department
Meduna Alexander, Doc. RNDr., CSc.
Professors
Honzík Jan M., Prof. Ing., CSc.
Hruška Tomáš, Prof. Ing., CSc.
Švéda Miroslav, Prof. Ing., CSc.
Associate Professors
Meduna Alexander, Doc. RNDr., CSc.
Zendulka Jaroslav, Doc. Ing., CSc.

Assistant Professors

    Cvrček Daniel, Ing., Ph.D.

    Kolář Dušan, Dr. Ing.

    Kreslíková Jitka, RNDr., CSc.

Assisstant Lecturers

    Matoušek Petr, Ing.

    Ráb Jaroslav, Ing.

Postgraduate Students

    Bartík Vladimír, Ing.

    Bednář David, Ing.

    Bureš František, Ing.

    Burget Radek, Ing.

    Čech Vladimír, Ing.

    Elbl Stanislav, Ing.

    Güttner Jakub, Ing.

    Heckel Martin, Ing.

    Kaláb Petr, Ing.

    Kolka Milan, Ing.

    Kopeček Tomáš, Ing.

    Kubát Lubomír, Ing.

    Kubíček Vladislav, Ing.

    Lorenc Luboš, Ing.

    Lukáš Roman, Ing.

    Očenášek Pavel, Ing.

    Petrucha Roman, Ing.

    Ryšavý Ondřej, Ing.

    Strach Michal, Ing.

    Ščuglík František, Ing.

    Škrkal Oto, Ing.

    Šmarda Ivan, Ing.

    Švec Jaroslav, Ing.

    Švec Martin, Ing.

    Vítek Martin, Ing.

    Vojta Tomáš, Ing.

Equipment

The Department uses the equipment of the Computer Centre.

Tuition

Abbreviat.	Course	Sem	Cr.	Hours	Lecturer
IAL	Algorithms	Z	5	39-0-0-0-13	Honzík Jan M., Prof. Ing., CSc.
ADS	Algorithms and Data Structures	L	7	39-0-0-0-39	Honzík Jan M., Prof. Ing., CSc.

ADS	Algorithms and Data Structures (for foreign students paying their tuition fee)	Z	6	39-0-0-39-0	Honzík Jan M., Prof. Ing., CSc.
APR	Algorithms and Programming	L	5	39-0-0-26-0	Kreslíková Jitka, RNDr., CSc.
DSI	Database Design	Z	6	39-0-0-6-20	Zendulka Jaroslav, Doc. Ing., CSc.
IFJ	Formal Languages and Translators	Z	5	39-6-0-0-7	Meduna Alexander, Doc. RNDr., CSc.
TC	Formal Specifications of IT Systems	Z	4	39-0-0-0-0	Švéda Miroslav, Prof. Ing., CSc.
SSD	Formal Specifications of Computer-Based Systems	L	0	39-0-0-0-0	Švéda Miroslav, Prof. Ing., CSc.
FLP	Functional and Logic Programming	Z	6	39-0-0-12-14	Kolář Dušan, Dr. Ing.
INS	Information Systems	Z	6	39-2-10-0-14	Hruška Tomáš, Prof. Ing., CSc.
KPA	Computer Communications and Interfacing	Z	6	39-0-0-12-14	Švéda Miroslav, Prof. Ing., CSc.
TID	Modern Theoretical Informatics	Z	0	39-0-0-0-13	Meduna Alexander, Doc. RNDr., CSc.
MW1	MS Windows Professional	Z	5	0-0-0-52-0	Honzík Jan M., Prof. Ing., CSc.
PSI	Computer Networks and Communication Protocols	Z	6	39-0-0-12-14	Švéda Miroslav, Prof. Ing., CSc.
PRD	Post-Relational Databases	L	6	26-0-0-26-13	Kolář Dušan, Dr. Ing.
PRJ	Programming Languages	L	6	39-12-0-0-14	Hruška Tomáš, Prof. Ing., CSc.
PRO	Programming Practice	L	2	0-0-0-0-26	Kreslíková Jitka, RNDr., CSc.
PPS	Software Engineering	L	5	39-12-0-0-14	Zendulka Jaroslav, Doc. Ing., CSc.
PDT	Data Communications and Computer Networks	L	6	39-8-0-10-8	Švéda Miroslav, Prof. Ing., CSc.
RPS	Project Management of Computer-Based Systems	L	6	39-0-0-0-26	Kreslíková Jitka, RNDr., CSc.
SVD	Specification of Embedded Systems	Z	0	39-0-0-0-0	Švéda Miroslav, Prof. Ing., CSc.
TJD	Programming Language Theory	Z	0	39-0-0-0-0	Hruška Tomáš, Prof. Ing., CSc.
TJD	Programming Language Theory	L	0	39-0-0-0-0	Hruška Tomáš, Prof. Ing., CSc.
IUS	Introduction to Software Engineering	Z	4	26-6-0-0-7	Zendulka Jaroslav, Doc. Ing., CSc.
VKA	Selected Chapters on Algorithms	L	0	39-0-0-0-0	Honzík Jan M., Prof. Ing., CSc.

VPD	Selected OOM Topics in Persistent Systems	L	0	39-0-0-0-0	Hruška Tomáš, Prof. Ing., CSc.
IZP	Fundamentals of Programming	Z	7	39-0-0-12-14	Kreslíková Jitka, RNDr., CSc.
IZ1	Fundamentals of Programming (for students paying their tuition fee)	Z	6	39-0-0-12-14	Kreslíková Jitka, RNDr., CSc.
ZAP	Fundamentals of Translators	L	6	39-12-0-0-14	Meduna Alexander, Doc. RNDr., CSc.
ZZD	Knowledge Discovery in Databases	Z	0	39-0-0-0-13	Zendulka Jaroslav, Doc. Ing., CSc.

Research Projects

Dynamic object oriented model in interpreted systems, FRVŠ MŠMT, FR828/2003/G1, 2003
Research leader: Güttner Jakub
Team leader: Hruška Tomáš

Tools for Support of Formal Specification and Verification of UML Based Diagrams, FRVŠ MŠMT, FR838/2003/G1, 2003
Research leader: Ryšavý Ondřej
Team leader: Dvořák Václav

Image Data Description for Content Based Retrieval in Medical Databases, FRVŠ MŠMT, FR830/2003/G1, 2003
Research leader: Heckel Martin
Team leader: Kršek Přemysl

Professionalization of Student Members in Higher Education Governance in Visegrad Group Countries, MVF, 36060356, 2003-2004
Research leader: Švec Jaroslav

Association Rule Discovery in Relational Databases, FRVŠ MŠMT, FR824/2003/G1, 2003
Research leader: Bartík Vladimír
Team leader: Zendulka Jaroslav

Computer Graphics Algorithms with FPGA Support, GAČR, GA102/02/0507, 2002-2003
Research leader: Zemčík Pavel

Development/Dissemination of Joint Courses - (PROG) in Applied Informatics and Multimedia, EC EUA ECTS, SOCRATES-PROG, 2002-2003
Team leader: Honzík Jan M.

Intensive Programme project - IP - Applied Informatics and Multimedia, EC EUA ECTS, Socrates - IP, 2002-2004
Team leader: Honzík Jan M.

Preparation of the Distance Form of Bachelor's Study Programme "Information Technology" for Accreditation, MŠMT, 2002 - 2004
Research leader: Honzík Jan M.

Co-operation of Universities in Supporting the State Struggle with Computer Crime, MV, 2002-2003
Team leaders: Cvrček Daniel, Hanáček Petr, Hruška Tomáš

ADVANCE - Advanced Validation Techniques for Telecommunication Protocols, EU-5FP-IST, IST-1999-29082, 2001-2004
Research leader: Bouajjani Ahmed

Environment for Developing, Modelling, and Application of Heterogeneous Systems, GACR, GA102/01/1485, 2001-2004
Research leader: Vavřín Petr
Team leaders: Češka Milan, Hanáček Petr, Hruška Tomáš, Janoušek Vladimír, Jirsík Václav, Kunovský Jiří, Malec Zdeněk, Peringer Petr, Pivoňka Petr, Rábová Zdeňka, Václavek Pavel, Vojnar Tomáš, Zbořil František

Research in Information and Control Systems, CEZ MŠMT, MSM 262200012, 1999-2003
Research leader: Honzík Jan M.
Team leaders: Češka Milan, Zendulka Jaroslav, Zezulka František

Embedded Control Systems and Their Inter-Communication, GAČR, GA102/02/1032, 2002-2004
Research leader: Švéda Miroslav
Team leaders: Bílek Jan, Srovnal Vilém

Co-operation

Co-operation in the Czech Republic

- Application Software, s.r.o.
- Autocont CZ, a.s.
- Faculty of Informatics, MU Brno
- InterSystems B.V.
- Department of Informatics FEI, VŠB – Technical University Ostrava
- Department of Automation and Measurement FEI, VŠB - Technical University Ostrava
- Department of Control Technology FEL, ČVUT Praha
- LBMS, s.r.o. Praha
- Microsoft, s.r.o.
- Minolta, s.r.o.
- MP-Soft, s.r.o. Brno
- STAVCERT, s.r.o. Praha
- UNIS, s.r.o., Brno
- VEMA, a.s.
- Military Academy in Brno
- Faculty of Applied Sciences, West Bohemian University, Plzeň

International Co-operation

- Slovak Technical University, Bratislava, Faculty of Informatics and Information Technology, Slovakia
- University of Arizona, Tuscon, Arizona, USA
- Universität Siegen, Germany
- University of Stirling, Stirling, Scotland, UK
- Microsoft Business Solutions, Denmark
- OnDemand Ltd., Austria

Visits of Staff Members to Foreign Institutions

- Honzík Jan M., Prof. Ing. CSc.: University of Technology, Graz, AT, 3 days.

- Honzík Jan M., Prof. Ing. CSc.: University of Applied Sciences, Osnabrück, DE, 3 days

- Honzík Jan M., Prof. Ing. CSc.: University of Applied Science Wiesbaden, DE, 3 days

- Kubíček Vladislav, Ing., Laboratoire d'Informatique de Paris 6, Université Pierre et Marie Curie, FR, 6 months

- Matoušek Petr, Ing., Laboratoire d'Informatique Algorithmique, Fondements et Applications (L.I.A.F.A.), Paris, FR, 6 months

- Meduna Alexander, Doc. RNDr. CSc., Faculty of Informatics, Universidad de Valladolid, ES, 7days

Agreements

- Kreslíková Jitka, RNDr., CSc., Agreement on Professional Aid, STAVCERT Praha, spol. s r.o.

- A Bilateral Agreement on Student and Teacher mobilities within the Socrates/Erasmus Programme Made with La Universidad de Valladolid, http://www.uva.es/, ES

Membership in Organizations and Societies

- Honzík Jan M., Prof. Ing., CSc., IGIP, IFIP, EUA-ECTS/DS National Coordinator

- Hruška Tomáš, Prof. Ing., CSc.,

    o ACM

    o Czech and Slovak Simulation Society (CSSS)

- Kolář Dušan, Dr. Ing.,

    o ACM

- Kreslíková Jitka, RNDr., CSc.,

  o Czech Society for Quality

  o Project Management Association

  o Czech Electrotechnical Society

- Švec Jaroslav, Ing.,

  o The European Higher Education Society

- Zendulka Jaroslav, Doc. Ing., CSc.,

  o ACM

  o Czech and Slovak Simulation Society (CSSS)

- Švéda Miroslav, Prof. Ing., CSc.,

  o IFIP WG10.1, since 1995

  o IEEE Computer Society, since 1996

  o IEEE Technical Committee on Engineering of Computer-Based Systems, since 1997

Publications

Chapters of Books:

Smolík Petr, Hruška Tomáš: Application of an Object-Oriented Metasystem in University Information System Development, Annals of Cases on Information Technology, Hershey, US, IDEA, 2003, pp. 550-562, ISBN 1-59149-061-9

Conferences:

Bartík Vladimír, Zendulka Jaroslav: Mining Association Rules from Relational Data – Average Distance Based Method, In: On The Move to Meaningful Internet Systems 2003: CoopIS, DOA and ODBASE, Catania, IT, Springer, 2003, pp. 757-766, ISBN 3-540-20498-9, ISSN 0302-9743

Bartík Vladimír: Average Distance Based Method for Association Rules Discovery in Relational Databases, In: Proceedings of 6th International Conference ISIM'03 - Information Systems Implementation and Modelling, Ostrava, CZ, MARQ, 2003, pp. 161-168, ISBN 80-85988-84-4

Bednář David, Kreslíková Jitka: Object-oriented model of Processes in Project Management, In: ASIS 2003, Ostrava, CZ, MARQ, 2003, p. 8, ISBN 80-85988-88-7

Bednář David, Kreslíková Jitka: Object-oriented modelling and simulation of software development lifecycle, In: Proceedings of 37th International Conference MOSIS´03 Modelling and Simulation of Systems, Ostrava, CZ, MARQ, 2003, p. 8, ISBN 80-85988-86-0

Bednář David: Project Management in Development of Software Products with Object-Oriented Technology, In: Proceedings of the 9th Conference and Competition STUDENT EEICT 2003, Brno, CZ, FEKT BUT, 2003, p. 5, ISBN 80-214-2379-X

Bureš František, Ryšavý Ondřej: Formal Specification of IEEE1451.1 Fragments, In: 11. International Conference on Software, Telecommunications & Computer Networks, Split, HR, FESB UoS, 2003, pp. 282-287, ISBN 953-6114-64-X

Bureš František: Selected Methods of Specification and Verification of Industrial Application, In: Proceedings of the 9th Conference and Competition STUDENT EEICT 2003, Brno, CZ, FEKT BUT, 2003, pp. 614-618, ISBN 80-214-2379-X

Burget Radek: Information Extraction from WWW Based on the Data Structure Knowledge, In: Sborník příspěvků 2. ročníku konference Znalosti 2003, Ostrava, CZ, FEI VŠB, 2003, pp. 271-280, ISBN 80-248-0229-5

Cvrček Daniel: In Santa's Crypto Get-Together, Brno, CZ, ECOM, 2003, pp. 12-20

Čech Vladimír, Kreslíková Jitka: Project Management Education Examples from Students Projects, In: EDMAN 03 Education for Management, Plzeň, CZ, 2003, p. 13, ISBN 80-86596-25-7

Elbl Stanislav: Parallel Translation Based On Grammar Systems, In: Proceedings Of The International Conference And Competition Student EEICT 2003, Brno, CZ, FEKT BUT, 2003, pp. 269-273, ISBN 80-214-2401-X

Güttner Jakub, Hruška Tomáš: Semantic Web as a Flexible Database, In: Datakon 2003 - Proceedings of the Annual Database Conference, Brno, CZ, MUNI, 2003, pp. 217-226, ISBN 80-210-3215-4

Güttner Jakub: Object Attributes as Functions, In: Proceedings of 6th International Conference ISIM '03, Ostrava, CZ, MARQ, 2003, pp. 169-177, ISBN 80-85988-84-4

Güttner Jakub: Object Database on Top of the Semantic Web, In: Proceedings of the WI/IAT 2003 Workshop on Applications, Products and Services of Web-based Support systems, Halifax, CA, 2003, pp. 97-102, ISBN 0-9734039-1-8

Güttner Jakub: Objects in the Semantic Web, In: SoftCOM 2003 - International Conference on Software, Telecommunications and Computer Networks, Split, HR, FESB, 2003, pp. 19-23, ISBN 953-6114-64-X

Heckel Martin, Zendulka Jaroslav: Data Mining and Its Use in Texture Analysis, In: Proceedings of the CS&P'2003 Workshop, Warsaw, PL, UW, 2003, pp. 225-234, ISBN 83-88374-71-0

Heckel Martin: Texture Analysis via Data Mining, In: Proceedings of the 2nd Australasian Data Mining Workshop, Sydney, AU, UTS, 2003, pp. 95-104, ISBN 0-9751724-1-7

Honzík Jan M., Kurečka Radomír: Industrial Orientation of the Bachelor's Study Programme for IT, In: Tvorba Softwaru 2003, Ostrava, CZ, Tanger, 2003, pp. 32-38, ISBN 80-85988-83-6

Honzík Jan M.: ECTS and Diploma Supplement – Tools of Quality Evaluation of the European Dimension of Higher Education, In: Hodnocení kvality vysokých škol, Ústí nad Labem, CZ, UJEP, 2003, pp. 17-24, ISBN 80-7044-463-0

Kaláb Petr: Dual Grammars, In: Proceedings of 6th International Conference ISIM'03 Information Systems Implementation and Modeling, Ostrava, CZ, MARQ, 2003, pp. 201-208, ISBN 80-85988-84-4

Kolka Milan: Multiturtle L-system Interpretation, In: Proceedings of 6th International Conference ISIM 03 Information System Implementation and Modeling, Ostrava, CZ, MARQ, 2003, pp. 179-186, ISBN 80-85988-84-4

Kotásek Petr, Zendulka Jaroslav: Data Cleaning Functionality in DMSL, In: Proceedings of 6th International Conference ISIM'03 Information Systems Implementation and Modelling, Ostrava, CZ, MARQ, 2003, pp. 99-108, ISBN 80-85988-84-4

Kreslíková Jitka, Bednář David: Project Management Education by Course of Knowledge Areas, In: EDMAN 03, Plzeň, CZ, EVIDA, 2003, p. 8, ISBN 80-86596-25-7

Kreslíková Jitka, Kubát Lubomír: Project Management Quality and ISO 9001, In: PROMA 03, Plzeň, CZ, EVIDA, 2003, p. 11, ISBN 80-86596-28-1

Lorenc Luboš: A New Method of Optimization in Parallel Compilers, In: Proceedings of 6th International Conference ISIM'03 Information Systems Implementation and Modelling, Ostrava, CZ, MARQ, 2003, pp. 187-194, ISBN 80-85988-84-4

Máčel Michal, Hruška Tomáš: Collaborative Applications, In: Systems Integration 2003 - Proceedings, Praha, CZ, 2003, pp. 429-436, ISBN 80-245-0522-3

Očenášek Pavel: Verification of Security Protocols, In: Proceedings of the 9th Conference and Competition STUDENT EEICT 2003, Brno, CZ, FEKT BUT, 2003, pp. 211-213, ISBN 80-214-2377

Ráb Jaroslav: Design and Verification of Real-Time UML System Models, In: Programmable Devices and Systems 2003, Kidlington, Oxford, GB, Elsevier, 2003, pp. 311-314, ISBN 0-08-044130-0

Ryšavý Ondřej, Švéda Miroslav: A Minimal Formal Language for Object-Oriented Specifications, In: Proceedings of the IEEE TC-ECBS and IFIP WG10.1 Joint Workshop on Formal Specifications of Computer-Based Systems, 2003, Huntsville, AL, US, US, 2003, pp. 35-40, ISBN 1-85769-189X

Ščuglík František, Švéda Miroslav: Automatically Generated CSP Specifications, In: Proceedings of the IEEE TC-ECBS and IFIP WG10.1 Joint Workshop on Formal Specifications of Computer-Based Systems, 2003, Huntsville, AL, US, US, 2003, pp. 41-47, ISBN 1-85769-189X

Ščuglík František: Diagram Based Formal Specification using CSP, In: Proceedings of the 9th Conference and Competition STUDENT EEICT 2003, Brno, CZ, FEKT BUT, 2003, pp. 629-633, ISBN 80-214-2379-X

Ščuglík František: Visualizing Formal Specifications Using Diagrams In: 11th International Conference on Software, Telecommunications & Computer Networks, Split, HR, FESB UoS, 2003, p. 5, ISBN 953-6114-64-X

Škrkal Oto: The Left-Most Derivation of Type Two in Matrix Grammars, In: Proceedings of 9th Conference and Competition Student EEICT 2003, Brno, CZ, FEKT BUT, 2003, pp. 566-570, ISBN 80-214-2379-X

Škrkal Oto: The Left-most Derivation of Type Two in Matrix Grammars, In: Proceedings of 6th International Conference ISIM'03 Information System Implementation and Modelling, Ostrava, CZ, MARQ, 2003, pp. 195-199, ISBN 80-85988-84-4

Šmarda Ivan: Using Free Software, In: Sborník a abstrakt XXI. mezinárodního kolokvia o řízení osvojovacího procesu, Vyškov, CZ, 2003, pp. 1-7, ISBN 80-7231-105-0

Švec Martin: Simple Semi-Conditional ET0L Grammars, In: Proceedings of the International Conference and Competition Student EEICT 2003, Brno, CZ, 2003, pp. 283-287, ISBN 80-214-2401-X

Švéda Miroslav, Rattray Charles, Rozenblit Jerzy: Formal Specifications of Computer-Based Systems, In: Proceedings of the IEEE International Conference and Workshop on the Engineering of Computer-Based Systems 2003, Huntsville, AL, US, ICSP, 2003, pp. 169-172, ISBN 0-7695-1917-2

Švéda Miroslav, Vrba Radimír: Embedded System Formal Specifications Reuse by a Case-Based Reasoning Approach, In: Proceedings of the 6th World Multiconference on Systemics, Cybernetics and Informatics, 2002, Vol. I, Orlando, US, IIIS, 2003, pp. 157-162, ISBN 980-07-8150-1

Švéda Miroslav: Engineering of Computer-Based Systems: Brno in 2004, In: Proceedings EDS'03, Brno, CZ, BUT , 2003, pp. 85-88, ISBN 80-214-2452-4

Švéda Miroslav: Executable Specifications with Rapid Prototyping for Embedded Distributed Systems, In: Programmable Devices and Systems 2003, Kidlington, Oxford, GB, Elsevier, 2003, pp. 49-54, ISBN 0-08-044130-0

Švéda Miroslav: Rapid Prototyping of Networked Embedded Systems, In: Proceedings of the IEEE International Conference and Workshop on the Engineering of Computer-Based Systems 2003, Huntsville, AL, US, ICSP, 2003, pp. 125-132, ISBN 0-7695-1917-2

Večeřa Ivo, Vrba Radimír, Švéda Miroslav: A/D Switched-Current Converter with Built-in Self Testing Features, In: Proceedings of the 6th World Multiconference on Systemics, Cybernetics and Informatics, 2002, Vol. III, Orlando, US, IIIS, 2003, pp. 367-370, ISBN 980-07-8150-1

Vítek Martin: New operations in formal language theory and their use, In: Proceedings of the international conference and competition, Brno, CZ, FEKT BUT, 2003, pp. 259-263, ISBN 80-214-2401-X

Journals:

Bureš František, Ryšavý Ondřej: Declarative Behaviour Description of Selected Class from Standard IEEE 1451.1, In: ElectronicsLetters.com, vol. 2003, No. 6, Brno, CZ, p. 6, ISSN 1213-161X

Cach Petr, Fiedler Petr, Švéda Miroslav, Prokop Miloš, Wagner Marek: A Sensor with Embedded Ethernet, In: WSEAS Transactions on Circuits, vol. 2, No. 1, Athens, GR, pp. 213-215, ISSN 1109-2734

Güttner Jakub: Can a Computer Think? (A Hypothetical Discussion between L. Wittgenstein and A. Turing), In: Pokroky matematiky, fyziky a astronomie, vol. 2003, No. 48, CZ, pp. 105-114, ISSN 0032-2423

Meduna Alexander at al.: A Simultaneous Reduction of Several Measures of Descriptional Complexity in Scattered Context Grammars, In: Information Processing Letters, vol. 2003, No. 84, Amsterdam, NL, p. 214-219, ISSN 0020-0190

Meduna Alexander at al.: On the Degree of Scattered Context-Sensitivity, In: Theoretical Computer Science, vol. 2003, No. 290, Paris, FR, pp. 2121-2124, ISSN 0303-3975

Meduna Alexander, Hruška Tomáš: A Street Will be Named after a Brilliant Mathematician Born in Brno (Gödel), In: Události (BUT News), vol. 2003, No. 10, CZ, pp. 24-24, ISSN 1211-4421

Meduna Alexander, Švec Martin: Descriptional Complexity of Generalized Forbidding Grammars, In: International Journal of Computer Mathematics, vol. 2003, No. 80, GB, pp. 11-17, ISSN 0020-7160

Meduna Alexander, Švec Martin: Forbidding ET0L Systems, In: Theoretical Computer Science, vol. 2003, No. 54, Paris, FR, pp. 256-276, ISSN 0303-3975

Meduna Alexander: Coincidental Extention of Scattered Context Languages, In: Acta Informatica, vol. 2003, No. 112, Berlin, DE, pp. 307-314, ISSN 0236-0112

Meduna Alexander: Simultaneously One-Turn Two-Pushdown Automata, In: International Journal of Computer Mathematics, vol. 2003, No. 82, GB, pp. 1-9, ISSN 0020-7160

Meduna Alexander: Two-Way Metalinear PC Grammar Systems and Their Descriptional Complexity, In: Acta Cybernetica, vol. 2003, No. 4, US, pp. 126-137, ISSN 0324-721X

Sajdl Ondřej, Bradáč Zdeněk, Vrba Radimír, Švéda Miroslav: Data Acquisition System Exploiting Bluetooth Technology, In: WSEAS Transactions on Circuits, vol. 2, No. 1, Athens, GR, pp. 117-119, ISSN 1109-2734

Ščuglík František, Švéda Miroslav: Automatically Generated CSP Specifications, In: Journal of Universal Computer Science, vol. 9, No. 11, AT, pp. 1277-1295, ISSN 0948-6968

Ščuglík František: Formal Specification User Interface for Embedded Systems, In: Elektrorevue - www.elektrorevue.cz, vol. 2003, No. 23, Brno, CZ, p. 5, ISSN 1213-1539

Švéda Miroslav, Kapoun Vladimír: Internet-Based Smart Sensor Networking Architectures, In: ElectronicsLetters.com , vol. 2003, No. 6, Brno, CZ, p. 5, ISSN 1213-161X

Švéda Miroslav, Vrba Radimír: An Integrated Framework for Internet-Based Applications of Smart Sensors, In: IEEE Sensors Journal, vol. 3, No. 5, US, pp. 579-586, ISSN 1530-437X

Švéda Miroslav, Vrba Radimír: Embedded System Specification Reuse by a Case Based Reasoning Approach, In: WSEAS Transactions on Computers, vol. 2, No. 1, Athens, GR, pp. 10-14, ISSN 1109-2750

Švéda Miroslav: Local Time for Formal Specification of Networked Embedded System, In: WSEAS Transactions on Computers, vol. 2, No. 1, Athens, GR, pp. 4-9, ISSN 1109-2750

Research Projects:

Ryšavý Ondřej: A Survey on Formal Representation of UML, Brno, CZ, 2003, p. 22

Ryšavý Ondřej: Specifying and Reasoning with Classes in Logic Calculus of Objects, Brno, CZ, 2003, p. 17

Dissertations:

Kotásek Petr: DMSL: The Data Mining Specification Language, Brno, CZ, FIT BUT, 2003, p. 179

Korčák Zdeněk: Signature Files with Variable-Length Signatures, Brno, CZ, FIT BUT, 2003, p.76

Seminars

 8.12.2003 **Seminar on Information Systems - F. Ščuglík**
 1.12.2003 **Seminar on Information Systems - M. Novotný**
24.11.2003 **Seminar on Information Systems - R. Burget, J. Güttner**
10.11.2003 **Seminar on Information Systems - V. Bartík, M. Heckel**
 3.11.2003 **Seminar on Information Systems - O. Ryšavý**
27.10.2003 **Seminar on Information Systems - L. Sekanina**
 6.10.2003 **Seminar on Information Systems - D. Kolář**
29.9.2003 **Seminar on Information Systems - A. Meduna**
26.5.2003 **Seminar on Information Systems - conclusion**
19.5.2003 **Seminar on Information Systems - conclusion**
12.5.2003 **Seminar on Information Systems - conclusion**
 5.5.2003 **Seminar on Information Systems - A. Meduna**
28.4.2003 **Seminar on Information Systems - T. Kopeček, J. Güttner**

Other Activities

- Co-organization of the "6th Information Systems Implementation and Modelling" (ISIM 2003). An international conference on theory, modelling techniques and tools, methods of information systems design and database systems (together with the Department of Intelligent Systems FIT).
- Co-organization of the 4th IEEE TC-ECBS and IFIP WG10.1 Joint Workshop on Formal Specifications of Computer-Based Systems (FSCBS 2003 Huntsville, AL, USA). An international workshop on methods and tools for formal specification and verification of computer-based systems (together with University of Arizona, Tuscon, USA and University of Stirling, UK).
- Memberships in programme committees of international scientific conferences: DATAKON 2003 Brno CR, Project Management (PROMA 03) Praha CR, 38th Spring International Conference Modelling and Simulation of Systems (MOSIS 2003) Brno CR, Security and Protection of Information 2003, Brno CR, The IASTED International Conference on Applied Simulation and Modelling (ASM 20030 Marbella ES, 2nd IASTED International Conference on Information and Knowledge Sharing (IKS 2003) Scottsdale USA, 10th IEEE International Conference and Workshop on the Engineering of Computer-Based Systems (ECBS 2003 Huntsville, AL, USA), 2nd WSEAS International Conference on Software Engineering, Parallel & Distributed Systems (SEPADS 2003, Crete, Greece).
- Co-operation with OnDemand, Vienna, Austria, on the development of IAS (Instruction Set Architecture) simulator for hardware/software codesign began. Students from the secondary school Gymnasium Řečkovice, Brno, and Microsoft Company also take part in the co-operation (Microsoft lent the SW).
- In the framework of Socrates-Erasmus, Doc. Meduna started co-operation with the Faculty of Informatics of the University of Valladolid, where he presented results of his recent research and teaching activities.
- The 10th Gaudeamus – Fair on Education, whose supervisor, founder and advisory board chairman is Prof. Ing. Jan M. Honzík, CSc. took place.

- Membership in the evaluation board of the competition called Crystal Disc within the framework of the international trade fair of information technology Invex 2003, where Prof. Jan M. Honzík acted as the chief executive of the evaluation board.
- Prof. Jan M. Honzík is the National Co-ordinator of ECTS (the only one in the CR) in EUA (European University Association). EUA is an important European body – the only representative of all universities in EU.
- Prof. Jan M. Honzík was delegated by ELA to be a consulting expert of a large project - electronic identifier for VZP.
- Co-operations with Microsoft and Autocont were started with respect to courses based on Microsoft products. Prof. Honzík is the initiator and supervisor of them.
- Two Socrates programmes: "Joint European MSc Programme" and "Intensive Programme Project" in Applied Informatics and Multimedia. Prof. Jan M. Honzík is a co-investigator of programmes co-ordinated by the TEI Heraklion Crete, Greece.

DEPARTMENT OF INTELLIGENT SYSTEMS

The Department of Intelligent Systems provides tuition of subjects for the Intelligent Systems specialization. This specialization comprises knowledge of several scientific areas: classical artificial intelligence, modelling of systems, simulation and formal analysis over system models, neural networks, genetic algorithms and fuzzy systems. The common features are the non-traditional ways of computing that enable solving extremely complex problems, uncertainties and dynamism of processes in progress.

The graduates will be able to model and create systems with signal recognition (speech and image processing), natural speech processing and decisions based on incomplete or imprecise information, at developing intelligent control systems, intelligent information systems and intelligent robots.

Research activities at the department focuses on intelligent systems but systems for specific applications, computer-aided systems, interface design and use of parallelism at different levels are also dealt with. Other areas of interest are integration of components into embedded applications, simulations and prototyping of different configurations and formal specification and verification of the design.

Most subjects are accompanied with projects or laboratories so that students might acquire practical skills and experience with the latest software products and systems.

Staff

Head of the Department
  Hanáček Petr, Doc. Dr. Ing.
Deputy Head of the Department
  Rábová Zdeňka, Doc. Ing., CSc.
Professors
  Češka Milan, Prof. RNDr., CSc.
Associate Professors
  Hanáček Petr, Doc. Dr. Ing.
  Kunovský Jiří, Doc. Ing., CSc.
  Rábová Zdeňka, Doc. Ing., CSc.
  Zbořil František, Doc. Ing., CSc.
Assistant Professors
  Janoušek Vladimír, Ing., Ph.D.
  Kočí Radek, Ing.
  Křena Bohuslav, Ing.
  Marek Vladimír, Ing.
  Peringer Petr, Dr. Ing.
  Vojnar Tomáš, Ing., Ph.D.
  Zbořil František jr., Ing.
Ph.D. Students
  Černohorský Jakub, Ing.

Drahanský Martin, Ing.
Erlebach Pavel, Ing.
Florián Vladimír, Ing.
Haša Luděk, Ing.
Hrubý Martin, Ing.
Martinek David, Ing.
Orság Filip, Ing.
Petřek Jiří, Ing.
Pospíšil Dominik, Mgr.
Rogalewicz Adam, Mgr.
Řezáč David, Ing.
Slavíček Pavel, Ing.
Smrčka Aleš, Ing.
Tomica Petr, Ing.
Turakhodjaeva Nasibakhon, Ing.
Zacios Dalibor, Ing.

Equipment

The Department uses the equipment of the Computer Centre

Tuition

Abbr	Course	Sem	Cr.	Hours	Lecturer
IAS	Assemblers	Z	5	39-0-0-13-0	Zbořil František, Doc. Ing., CSc.
IAS	Assemblers	L	5	39-0-0-13-0	Zbořil František, Doc. Ing., CSc.
BPI	Bachelor s project CSE	Z	6	0-0-0-0-78	Rábová Zdeňka, Doc. Ing., CSc.
BKR	Computer Security and Cryptography	L	6	39-0-0-0-26	Hanáček Petr, Doc. Dr. Ing.
DPI	Diploma project	L	10	0-0-0-0-130	Rábová Zdeňka, Doc. Ing., CSc.
DPX	Diploma project (abroad)	L	15	0-0-0-0-130	Rábová Zdeňka, Doc. Ing., CSc.
IE1	Electrical Engineering 1	Z	5	26-13-0-0-13	Kunovský Jiří, Doc. Ing., CSc.
IE2	Electrical Engineering 2	L	7	26-13-12-0-14	Kunovský Jiří, Doc. Ing., CSc.
I2E	Electrical Engineering 2 (for foreign students)	L	6	26-13-12-0-14	Kunovský Jiří, Doc. Ing., CSc.
ISD	Intelligent Systems	Z	0	39-0-0-0-13	Zbořil František, Doc. Ing., CSc.
IJC	C Language	Z	5	39-0-0-0-13	Peringer Petr, Dr. Ing.
IJC	C Language	L	5	39-0-0-0-13	Peringer Petr, Dr. Ing.
CPP	C a C++ Languages	Z	6	39-0-0-0-26	Peringer Petr, Dr. Ing.
CPP	C a C++ Languages	L	6	39-0-0-0-26	Peringer Petr, Dr. Ing.
MSI	Modelling and Simulation	Z	6	39-0-0-10-16	Rábová Zdeňka, Doc. Ing., CSc.
MSD	Modelling and Simulation	Z	0	39-0-0-9-0	Rábová Zdeňka, Doc.

APP	Advanced Computer Applications	L	6	39-0-0-26-0	Ing., CSc. Kunovský Jiří, Doc. Ing., CSc.
NEU	Neural Networks	Z	6	39-0-0-0-26	Zbořil František, Doc. Ing., CSc.
OMP	Object-Oriented Modelling and Prototyping	L	6	26-0-0-20-19	Janoušek Vladimír, Ing., Ph.D.
IOS	Operation Systems	L	5	39-0-0-0-13	Peringer Petr, Dr. Ing.
OS1	Operation Systems 1	Z	5	39-0-26-0-0	Peringer Petr, Dr. Ing.
OS1	Operation Systems 1 (for foreign students)	L	5	39-0-0-0-26	Peringer Petr, Dr. Ing.
PDA	Parallel and Distributed Algorithms	Z	6	39-0-0-0-26	Hanáček Petr, Doc. Dr. Ing.
PI1	Year project 1/2	Z	0	0-8-0-0-18	Rábová Zdeňka, Doc. Ing., CSc.
PI2	Year project 2	L	4	0-6-0-0-20	Rábová Zdeňka, Doc. Ing., CSc.
P2X	Year project 2 (abroad)	L	6	0-6-0-0-20	Rábová Zdeňka, Doc. Ing., CSc.
PI3	Semester project	Z	3	0-8-0-0-31	Rábová Zdeňka, Doc. Ing., CSc.
P3X	Semester project (abroad)	Z	5	0-8-0-0-31	Rábová Zdeňka, Doc. Ing., CSc.
SOJ	Assembly Languages	Z	6	39-6-0-6-14	Zbořil František, Doc. Ing., CSc.
TI1	Theoretical Computer Science 1	Z	6	39-12-0-2-12	Češka Milan, Prof. RNDr., CSc.
TI2	Theoretical computer science 2	L	6	39-0-0-12-14	Češka Milan, Prof. RNDr., CSc.
TAD	Theory and applications of Petri nets	L	0	39-0-0-4-0	Češka Milan, Prof. RNDr., CSc.
TO2	Circuit Theory (for foreign students)	L	5	26-0-39-0-0	Kunovský Jiří, Doc. Ing., CSc.
UIN	Artificial Intelligence	L	6	39-6-0-6-14	Zbořil František, Doc. Ing., CSc.
VSL	Computability and complexity	Z	6	39-12-0-0-14	Janoušek Vladimír, Ing., Ph.D.
VND	Highly-Sophisticated Computations	L	0	39-0-0-0-0	Kunovský Jiří, Doc. Ing., CSc.

Research Projects

Access to Research Infrastructure Action of the Improving Human Potential Programme, EU, HPRI-CT-1999-00026, 2003
BioFinger, FHG-IGD, BioFinger, 2003
Research leader: Busch Christoph
Team leaders: Arnold Michael, Drahanský Martin, Imor Heinrich, Reinefeld Tom, Zwiesele Alexander

Biometric Security Systems, FRVŠ MŠMT, FR0835/2002/G1, 2003
Research leader: Orság Filip
Team leaders: Drahanský Martin, Zbořil František

Modelling and Simulation for the Master's Study Programme, FRVŠ MŠMT, FR0821/2003/F1, 2003
Research leader: Rábová Zdeňka
Team leaders: Hanáček Petr, Peringer Petr

Environment Design for Developing Heterogeneous Models, FRVŠ MŠMT, FR833/2003/G1, 2003
Research leader: Martinek David
Team leaders: Černohorský Jakub, Rábová Zdeňka

Advanced Methods of Verification of Parametric and Infinite-State Systems, GAČR, GA102/03/D211, 2003-2006
Research leader: Vojnar Tomáš
Team leader: Češka Milan

State Space Reductions for OO Petri Nets, FRVŠ MŠMT, FR829/2003/G1, 2003
Research leader: Haša Luděk
Team leader: Češka Milan

Co-operation of Universities in Supporting the State Struggle with Computer Crime, MV, 2002-2003
Team leaders: Cvrček Daniel, Hanáček Petr, Hruška Tomáš

ADVANCE - Advanced Validation Techniques for Telecommunication Protocols, EU-5FP-IST, IST-1999-29082, 2001-2004
Research leader: Bouajjani Ahmed

Environment for Developing, Modelling, and Application of Heterogeneous Systems, GAČR, GA102/01/1485, 2001-2004
Research leader: Vavřín Petr
Team leaders: Češka Milan, Hanáček Petr, Hruška Tomáš, Janoušek Vladimír, Jirsík Václav, Kunovský Jiří, Malec Zdeněk, Peringer Petr, Pivoňka Petr, Rábová Zdeňka, Václavek Pavel, Vojnar Tomáš, Zbořil František

Research in Information and Control Systems, CEZ MŠMT, MSM 262200012, 1999-2003
Research leader: Honzík Jan M.
Team leaders: Češka Milan, Zendulka Jaroslav, Zezulka František

Co-operation

Co-operation in the Czech Republic

- Department of Informatics FEI, VŠB – Technical University in Ostrava

- Department of Computers FEL, ČVUT Praha

- Department of Computer Science and Engineering WBU in Plzeň

International Co-operation

- Siemens AG Österreich, Wien, Austria

- Technische Universitaet Berlin

- University of Lingby, Denmark

- University of Vienna, Austria

- University of Huddersfield, Huddersfield, Department of Computer Science, UK

- University of Malta, Malta

- LIAFA, Université Paris 7 - Denis Diderot/CNRS, France

- Uppsala University, Sweden

- Weizmann Institute of Science, Rehovot, Israel

- VERIMAG, Université Joseph Fourier/CNRS, Grenoble, France

- Malmö University

- TU Košice, Slovakia

Visitors to the Department
- Alexandre Bergel, University of Bern – presentation of Squeak open system (initiative ESUG - European Smalltalk Users Group)
- Doc. Ing. Jaroslav Sklenář, CSc., University of Malta, preparations for a joint publication.
- Prof. Dr.-Ing. Dr. h.c. K.W. Bonfig, Universität Siegen, Germany

Visits of Staff Members to Foreign Institutions

- A visit to Universität Siegen, GE, Fachbereich 12 - Informatik und Elektrotechnik
- A visit to Edinburgh Parallel Computing Centre, The University of Edinburgh, James Clerk Maxwell Building, Mayfield Road, Edinburgh, EH9 3JZ, United Kingdom, 21th May 2003 to 9th July 2003, a stay within the Training & Research on Advanced Computing Systems project.
- A visit to Katholische Universität Eichstätt-Ingolstadt, 85071 Eichstätt, Germany, 14th Sept 2003 to 27th Sept 2003, participation in the 4th Advanced Course on Petri Nets
- VERIMAG, Université Joseph Fourier/CNRS, Grenoble, France. March 2003. A meeting of teams involved in the area of verification of infinite-state systems, and presentation of results in the area of verification of parametric systems with shared resources
- LIAFA, Université Paris 7 - Denis Diderot/CNRS, France, December 2003. A meeting with the team of Prof. A. Bouajjani, preparatory work on a joint article and discussion on future co-operation in the field of automated verification of parametric and infinite-state systems.

Agreements

A research agreement on co-operation in automatic methods for verification of systems with a complex and dynamic structure and for verification of systems with advanced qualitative features between LIAFA, Université Paris 7 - Denis Diderot/CNRS (Prof. A Boujjani) and FIT BUT in Brno (Prof. M. Češka, Dr. T. Vojnar).

- A bilateral agreement on co-operation within the Socrates/Erasmus programme made with Universität Siegen http://www.mt.et-inf.uni-siegen.de/, Germany

Membership in Organizations and Societies

- Češka Milan, Prof. RNDr., CSc.,

    o TC 10 IFIP Committee - Computer systems technology

    o IFIP WG 10.1 Computer Aided System Theory

    o Body of editors of the International Journal of General Systems, Gordon and Breach Science Publisher, USA

    o Research Board of Advisors, American Biographical Institute

    o Gesellschaft für Informatik, Germany

    o Czech and Slovak Simulation Society (CSSS) in the framework of EUROSIM

    o ACM - SIGSAC - Special Interest Group on Security, Audit and Control

- Hanáček Petr, Dr. Ing.,

    o CIS (Czech and Slovak Information Society)

    o Czech and Slovak Simulation Society (CSSS)

    o ACM - SIGSAC - Special Interest Group on Security, Audit and Control

    o CEO (Centre for Electronic Commerce)

- Janoušek Vladimír, Ing., Ph.D.,

    o Czech and Slovak Simulation Society (CSSS)

        - Jiří Kunovský, Doc.Ing.,CSc.,

    o Czech and Slovak Simulation Society (CSSS)

- Peringer Petr, Dr. Ing.,

    o Czech and Slovak Simulation Society (CSSS)

    o Technical standardization committee No. 20 "Information Technology" (Czech Standard Institute)

- Rábová Zdeňka, Doc. Ing., CSc.,

    o Committee of the Czech and Slovak Simulation Society (CSSS) in the framework of EUROSIM

    o AFCEA

- Vojnar Tomáš, Ing., Ph.D.

    o Czech and Slovak Simulation Society (CSSS)

- Zbořil František, Doc. Ing., CSc.,

    o Committee of the Czech and Slovak Simulation Society (CSSS) in the framework of EUROSIM

Publications

Book Chapters:

Bouajjani Ahmed, Habermehl Peter, Vojnar Tomáš: Verification of Parametric Concurrent Systems with Prioritized FIFO Resource Management, CONCUR 2003 - Concurrency Theory, Berlin, DE, Springer, 2003, pp. 174-190, ISBN 3-540-40753-7

Češka Milan, Haša Luděk, Vojnar Tomáš: Partial-Order Reduction in Model Checking of Object-Oriented Petri Nets, Computer Aided Systems Theory - EUROCAST 2003, Berlin, DE, Springer, 2003, pp. 265-278, ISBN 3-540-20221-8

Conferences

Arnold Michael, Busch Christoph, Drahanský Martin: Comparative Study on Fingerprint Recognition Systems - Projekt BioFinger, In: Proceedings BIOSIG 2003: Biometrics and Electronic Signatures, Darmstadt, DE, FHG-IGD, 2003, pp. 33-38, ISBN 3-88579-360-1

Caruana Etienne, Češka Milan, Sklenář Jaroslav: Using Petri Nets in Simulation of Manufacturing Systems (extended version), In: Proceedings of XXVth International Autumn Colloquium ASIS 2003, Ostrava, CZ, MARQ, 2003, p. 189-202, ISBN 80-85988-88-1-7

Caruana Etienne, Češka Milan, Sklenář Jaroslav: Using Petri Nets in Simulation of Manufacturing Systems, In: IPSI-2003 Proceedings, Belgrad, YU, IPSI, 2003, p. 5, ISBN 88-85280-62-5

Češka Milan, Haša Luděk, Vojnar Tomáš: Partial Order Reduction in Model Checking of Object-Oriented Petri Nets, In: Cast and Complexity in Biological, Physical and Engineering Systems, Extended Abstracts, Eurocast 2003, Las Palmas de Gran Canaria, Canary Islands, ES, ULPGC, 2003, pp. 254-256, ISBN 84-688-0820-2

Drahanský Martin, Orság Filip, Smolík Luděk: Biometric Security Systems, In: Proceedings of Santa's Crypto Get-Together 2003, Praha, CZ, ECOM, 2003, p. 1-10

Drahanský Martin, Orság Filip: Biometric Security Systems: Fingerprint and Speech Technology, In: Proceedings of the 1st Indian International Conference on Artificial Intelligence, Tallahassee, US, IICAI, 2003, pp. 703-711, ISBN 0-9727412-0-8

Florián Vladimír, Peringer Petr: System for 3D Visualization of Simulation Results, In: Proceedings of XXV-th International Autumn Colloquium ASIS 2003, Ostrava, CZ, MARQ, 2003, p. 4, ISBN 80-85988-88-7

Hanáček Petr, Rábová Zdeňka, Zbořil František: Model of Surrounding Environment of a Mobile Robot, In: MOSMIC'2003, Žilina, SK, EDIS ŽU, 2003, pp. 25-30, ISBN 80-8070-139-3

Hanáček Petr: Chip Cards in Information Systems, In: Proceedings of Datakon 2003, Brno, CZ, MUNI, 2003, pp. 15-22, ISBN 80-210-3215-4

Haša Luděk, Češka Milan: Allocational Temporal Logic in Model Checking for Object-Oriented Petri Nets, In: Proceedings of 37th International Conference MOSIS´03 Modelling and Simulation of Systems, Ostrava, CZ, MARQ, 2003, pp. 177-182, ISBN 80-85988-86-0

Haša Luděk, Češka Milan: Design of a Model Checker for Object-Oriented Petri Net Models, In: IPSI-2003 Proceedings, Belgrad, YU, IPSI, 2003, p. 6, ISBN 88-85280-62-5

Herout Adam, Řezáč David, Tišnovský Pavel: Visualization of 3D Potential Fields Computed Using TKSL/C, In: Proceedings of the 9th Conference and Competition STUDENT EEICT 2003, Brno, CZ, FEKT BUT, 2003, pp. 583-587, ISBN 80-214-2379-X

Herout Adam, Řezáč David, Tišnovský Pavel: Visualization of 3D Potential Fields Computed Using TKSL/C, In: Proceedings of the International Conference and Competition STUDENT EEICT 2003, Brno, CZ, 2003, pp. 310-314

Hrubý Martin, Kočí Radek: Modern Simulation Techniques and Tools, In: Proceedings of the International Workshop MOSMIC'2003, Žilina, SK, FRI ŽU, 2003, pp. 7-15, ISBN 80-8070-139-3

Hrubý Martin: A General Heterogeneous Simulation Kernel, In: Proceedings of the International Conference and Competition - Student EECIT 2003, Brno, CZ, 2003, pp. 353-357, ISBN 80-214-2401-X

Hrubý Martin: Formal Specification of the HELEF Simulation Language, In: Proceedings of 37th International Conference MOSIS'03, Ostrava, CZ, 2003, pp. 143-148, ISBN 80-85988-86-0

Janoušek Vladimír, Kočí Radek: PNtalk: Concurrent Language with MOP, In: Proceedings of the CS&P'2003 Workshop, Warsawa, PL, UW, 2003, pp. 271-282, ISBN 83-88374-71-0

Janoušek Vladimír, Slavíček Pavel: DEVS - Based Heterogenous Simulation, In: Proceedings of XXVth International Autumn Colloquium ASIS 2003, Ostrava, CZ, MARQ, 2003, pp. 213-218, ISBN 80-58988-88-7

Kočí Radek, Rábová Zdeňka: Purposes of the PNtalk System, In: Proceedings of International Conference MOSIS '03, Ostrava, CZ, MARQ, 2003, pp. 149-156, ISBN 80-85988-86-0

Kočí Radek: The Open Architecture of the PNtalk System, In: Proceedings of the International Conference and Competition - Student EECIT 2003, Brno, CZ, 2003, pp. 358-362, ISBN 80-214-2401-X

Kunovský Jiří, Melkes František, Petřek Jiří: Equation System Simplification Using the Taylor Series Method, In: Proceedings of 37th International Conference MOSIS'03, Ostrava, CZ, MARQ, 2003, pp. 165-170, ISBN 80-85988-86-0

Kunovský Jiří, Petřek Jiří, Řezáč David: Modern Taylor Series Method in Simulation of Processes and Systems, In: Proceedings of International Carpathian Control Conference ICCC'2003, Košice, SK, TU in Košice, 2003, pp. 337-340, ISBN 80-7099-509-2

Kunovský Jiří, Řezáč David: Stiff Systems Detection Using Taylor Series Method, In: Proceedings of 37th International Conference MOSIS´03 Modelling and Simulation of Systems, Ostrava, CZ, MARQ, 2003, pp. 275-278, ISBN 80-85988-88-7

Kunovský Jiří, Řezáč David: Electrical Fields Solved by TKSL/C, In: Proceedings of 37th International Conference MOSIS'03, Ostrava, CZ, MARQ, 2003, pp. 171-176, ISBN 80-85988-86-0

Kunovský Jiří, Řezáč David: Parallel Computations Based on Taylor Series Method, In: Proceedings 4th MATHMOD Vienna, Wien, AT, ARGESIM, 2003, pp. 316-317, ISBN 3-901608-24-9

Kunovský Jiří, Zacios Dalibor: Dynamics of Real-Time Simulation, In: Proceedings of XXVth Internation Autumn Colloquium ASIS2003 Advanced Simulation of Systems, Ostrava, CZ, 2003, pp. 271-274, ISBN 80-85988-88-7

Martinek David, Černohorský Jakub, Rábová Zdeňka: Eclipse as Modelling Platform, In: Proceedings of XXVth Internation Autumn Colloquium ASIS2003 Advanced Simulation of Systems, Ostrava, CZ, MARQ, 2003, pp. 203-208, ISBN 80-85988-88-7

Martinek David, Černohorský Jakub, Rábová Zdeňka: Graphical Interface of Simulation, In: Proceedings of 37th International Conference MOSIS'03 Modelling and Simulation of Systems, Ostrava, CZ, MARQ, 2003, pp. 131-136, ISBN 80-85988-86-0

Martinek David, Peringer Petr: Parallel Modelling in FuzzySIMLIB/C++, In: Proceedings of 37th International Conference MOSIS´03 Modelling and Simulation of Systems, Ostrava, CZ, MARQ, 2003, pp. 157-164, ISBN 80-85988-86-0

Orság Filip, Zbořil František: Endpoint Detection in the Continuous Speech Using the Neural Networks, In: Proceedings of 37th International Conference MOSIS´03 Modelling and Simulation of Systems, Ostrava, CZ, MARQ, 2003, p. 7, ISBN 80-85988-86-0

Růžička Richard, Zbořil František jr.: Representation of Datapath Structure in Predicate Logic and its Implementation in Prolog, In: Proceedings of International Carpathian Control Conference, Košice, SK, TU v Košiciach, 2003, pp. 727-730, ISBN 80-7099-509-2

Řezáč David: TKSL/C and Partial Differential Equations, In: Proceedings of the 9th Conference and Competition STUDENT EEICT 2003, Brno, CZ, FEKT BUT, 2003, pp. 645-649, ISBN 80-214-2379-X

Smrčka Aleš: Universal Disassembler, In: Proceedings of the International Conference and Competition - Student EEICT 2003, Brno, CZ, 2003, p. 3, ISBN 80-214-2401-X

Zacios Dalibor: TKSL Simulation System in a Database Environment, In: Proceedings of 37th International Conference MOSIS '03, Ostrava, CZ, MARQ, 2003, pp. 137-142, ISBN 80-85988-86-0

Zbořil František jr., Zbořil František: Plan Reconsideration in Hybrid Agent System, In: Proceedings of XXVth International Autumn Colloquium ASIS 2003, Ostrava, CZ, MARQ, 2003, pp. 315-321, ISBN 80-85988-88-1-7

Zbořil František jr.: Risk Analysis through Multiagent Systems, In: Proceedings of International Carpathian Control Conference, Košice, SK, TU in Košice, 2003, pp. 845-848, ISBN 80-7099-509-2

Zbořil František jr.: Information Sharing and Distribution in Multiagent Systems, In: Proceedings of 37th International Conference MOSIS '03, Ostrava, CZ, MARQ, 2003, pp. 287-292, ISBN 80-85988-86-0

Journals:

Křena Bohuslav: Object-oriented Petri Nets and their Application and Type Analysis, In: Information Technologies and Control, vol. 1, No. 1, Sofia, BG, pp. 27-31,

Research Projects:

Drahanský Martin, Orság Filip, Smolík Luděk: Design of a Biometric Security System, Bonn, GE, BSI, 2003, p. 1-4

Software:

Marek Vladimír: Web-based evidence system for student activities in the Czech Republic , Brno, CZ, 2003

Habilitation:

Hanáček Petr: Criteria for Information System Security Evaluation, habilitation, Brno, CZ, FIT BUT, 2003, p. 71

Teaching Texts:

Zbořil František: Assemblers, teaching texts for the "Assemblers" course, Brno, CZ, 2003, p. 327

Zbořil František: Assembly Languages, teaching texts for the "Assembly Languages" course, Brno, CZ, 2003, p. 352

Zbořil František: Computer-Oriented Languages, teaching texts for "Computer-Oriented Languages" course, Brno, CZ, 2003, p. 352

Products:

PNtalk system (v. 96), 2003
Authors: Janoušek Vladimír, Vojnar Tomáš

Other activities

- Organization of the "6th Information Systems Modelling" (ISM 2003), an international conference on theory, modelling techniques and tools, methods of information systems design and database systems.
- Participation in organizing the "37th International Conference on Modelling and Simulation of Systems" (MOSIS 2003), an international conference focused on simulation, esp. the theory, tools, methods and applications.
- Participation in organizing the "XXVth International Autumn Colloquium ASIS 2003", an international conference focused on simulation theory, tools, methods and applications.
- Participation in organizing the inter-faculty students conference EEICT 2003.
- Memberships of programme committees of international scientific conferences (MOSIS 2003, CR, ASIS 2003, CR, ISM 2003, CR, ECI 2003, SK, SCI 2003, USA).
- Membership of the CSSS (Czech and Slovak Simulation Society) Committee.

DEPARTMENT OF COMPUTER GRAPHICS AND MULTIMEDIA

The Department of Computer Graphics and Multimedia is responsible for teaching courses in the Master's specialization called Computer Graphics and Multimedia, which covers computer graphics principles, multimedia principles, man-machine interface principles, image and sound processing and compression, application interfaces for computer graphics and multimedia applications programming, and basics of applied computer graphics disciplines, such as computer-aided design (CAD), geographic information systems, etc. The department is also responsible for teaching **Signals and Systems**, **Fundamentals of Computer Graphics** and **Man-Machine Interface Design** in the Bachelor's study programme called Information Technology.

Research activities of the department are mainly focused on general computer graphics algorithms, rendering, animation in 3D space, modern methods of man-computer interaction in virtual 3D space, image and signal processing, medical data imaging and processing, and on applications of computer graphics. The main research topics are the following:

- DSP a FPGA accelerated computer graphics algorithms,

- Feature extraction for robust speech recognition based on the knowledge of human hearing

- very low bit-rate speech coding

- realistic rendering of complex scenes and raster models,

- automatic defining of speech units

- creation of large speech databases

- animating articulated structures, kinematics and dynamics,

- medical data imaging and processing, human figure modelling, model reconstruction from VH data sets,

- parallel computing for signal and graphics processing

The majority of courses consist of lectures supplemented with projects and laboratory sessions. The knowledge from the lectures is further developed in laboratory sessions and practised in individually assigned projects and team projects. Most assignments are computer independent. In case of complex tasks, which need specialized equipment, the necessary equipment, such as high performance Silicon Graphics graphic stations and specialized peripheries, is available.

Staff

Head of the Department
    Zemčík Pavel, Doc. Dr. Ing.
Deputy Head of the Department
    Černocký Jan, Doc. Dr. Ing.
Professors
    Heřmanský Hynek, Prof., Dr.Ing.

Associate Professors

Černocký Jan, Doc. Dr. Ing.

Zemčík Pavel, Doc. Dr. Ing.

Research Worker

Janků Ladislava, Ing.

Assistant Professors

Dobšík Martin, Ing.

Kršek Přemysl, Ing., Ph.D.

Tišnovský Pavel, Ing.

Assistant Lecturer

Burget Lukáš, Ing.

Motlíček Petr, Ing.

Technical Staff

Otáhalová Sylva

Ph.D. Students

Abu Kteish Ibrahim, Ing.

Beran Vítězslav, Ing.

Grézl František, Ing.

Herout Adam, Ing.

Chudý Robert, MgA.

Jenderka Petr, Ing.

Kadlec Jaroslav, Ing.

Karafiát Martin, Ing.

Pečiva Jan, Ing.

Potúček Igor, Ing.

Schwarz Petr, Ing.

Sumec Stanislav, Ing.

Szöke Igor, Ing.

Španěl Michal, Ing.

Vícha Tomáš, Ing.

Equipment

- 3D Minolta VIVID 800 scanner for automatic scanning of objects up to the size of 1x1x1m with a computer-controlled revolving table for manipulation with the scanned objects. The scanner is connected to the Silicon Graphics Octane workstation.
- Software called SPEL - Speech Processing Electronic Library specialized IEEE software for speech signal processing.
- CAMEA DX6 s DSP TI C6711 and FPGA Virtex E-300 for acceleration of graphical computing.

Tuition

Abbr.	Course	Sem	Cr.	Hours	Lecturer
MMD	Advanced methods of 3D scene visualization	Z	0	39-0-0-0-0	Zemčík Pavel, Doc. Dr. Ing.
MZD	Modern methods of speech processing	L	0	39-0-0-0-0	Černocký Jan, Doc. Dr. Ing.
MUM	Multimedia	L	6	26-0-0-18-21	Zemčík Pavel, Doc. Dr. Ing.

PGD	Computer graphics	Z	0	39-0-0-0-0	Serba Ivo, Prof. Ing., CSc.
POG	Computer graphics	L	7	39-0-0-18-21	Zemčík Pavel, Doc. Dr. Ing.
PGP	Advanced computer graphics	L	6	26-0-0-26-0	Kršek Přemysl, Ing., Ph.D.
ISS	Signals and systems	Z	6	39-0-0-12-14	Černocký Jan, Doc. Dr. Ing.
SCS	Human-machine interface	Z	6	26-0-0-18-21	Zemčík Pavel, Doc. Dr. Ing.
SXC	Systems, processes, and signals	Z	7	39-12-0-24-0	Černocký Jan, Doc. Dr. Ing.
SXC	Systems, processes, and signals	L	7	39-12-0-24-0	Černocký Jan, Doc. Dr. Ing.
ZPG	Fundamentals of computer graphics	Z	6	39-0-0-26-0	Kršek Přemysl, Ing., Ph.D.
ASD	Audio and speech processing by humans and machines	Z	0	39-0-0-0-0	Heřmanský Hynek, Prof., Dr. Ing.

Research Projects

Very low bit-rate language independent speech coding, BARRANDE, 2003-041-1, 2003
Research leader: Černocký Jan
Team leader: Baudoin Genevieve

A very low rate speech encoder, FRVŠ MŠMT, FR842/2003/G1, 2003
Research leader: Karafiát Martin
Team leader: Černocký Jan

Collaborative virtual environment, CESNET, 049/2003, 2003
Research leader: Zemčík Pavel
Team leaders: Kašpárek Tomáš, Kršek Přemysl

Image data description for content based retrieval in medical databases, FRVŠ MŠMT, FR830/2003/G1, 2003
Research leader: Heckel Martin
Team leader: Kršek Přemysl

SPEECON – Speech driven interfaces for consumer applications, EU-HLT, IST-1999-10003, 2003
Research leader: Pollák Petr
Team leaders: Černocký Jan, Jenderka Petr, Kašpárek Tomáš, Otáhalová Sylva

3C Research - Convergent technology research for digital media processing and communications, Rendering on demand, 3C Research, 2003
Team leaders: Fučík Otto, Zemčík Pavel

Computer graphics algorithms with FPGA support, GAČR, GA102/02/0507, 2002-2003
Research leader: Zemčík Pavel

Data driven and anthropic coding and recognition of speech, GAČR, GA102/02/D108, 2002-2005
Research leader: Černocký Jan

Voice technologies for support of information society, GAČR, GA102/02/0124, 2002-2004
Research leader: Černocký Jan
Team leaders: Burget Lukáš, Grézl František, Karafiát Martin, Motlíček Petr, Schwarz Petr

Multi Modal Meeting Manager, EU-HLT, IST-2001-34485, 2002-2005
Research leader: Heřmanský Hynek
Team leaders: Černocký Jan, Zemčík Pavel

Development in the area of creating FEM models of human tissues for biomechanics application, GAČR, GA201/01/D141, 2001-2004
Research leader: Kršek Přemysl

Research in Information and Control Systems, CEZ MŠMT, MSM 262200012, 1999-2003
Research leader: Honzík Jan M.
Team leaders: Češka Milan, Zendulka Jaroslav, Zezulka František

Co-operation

Co-operation in the Czech Republic

- Faculty of Informatics MU Brno, Doc. Karel Pala, Dr. Ivan Kopeček, Dr. Tomáš Staudek – co-operation in speech processing and computer graphics
- VŠB-TU, Ostrava, Faculty of Electronics and Informatics, Dr. Arnošt Šarman – annual series of lectures given by the staff and Ph.D. students of UPGM, VŠB-TU – focus on computer graphics
- Centre for Machine Perception, FELK ČVUT Praha, Dr. Jiří Matas – co-operation on image processing related to transport
- ÚTIA Praha, Dr. Jaroslav Kadlec, Ing. Jan Schier - co-operation in the field of algorithm implementation for image processing in FPGA
- Teaching hospital Fakultní nemocnice u Sv. Anny, Brno, Clinic of Imaging Methods, Head of the Clinic Doc. MUDr. Petr Krupa – co-operation in the field of computer models of tissues.

International Co-operation

- University of Bristol, Bristol, UK, Department of Computer Science, Dr. Alan Chalmers – co-operation in the area of computer graphics, exchange of Ph.D. students
- University of Surrey, Guildford, UK, Centre for Vision, Speech, and Signal Processing, Prof. Josef Kittler, Dr. William Christmas – image processing, exchange of Ph.D. students
- University of Helsinki, Helsinki, Finland, Laboratory of Computational Engineering, Prof. Mikko Sams, Dr. Michael Frydrych – co-operation in the area of man-machine communication, exchange of Ph.D. students
- Lappeenranta University of Technology, Lappeenranta, Finland, Prof. Heikki Kälviäinen, Prof. Jan Voráček – image processing, exchange of students, and MSc. Study in Finland within the framework of IMPIT Project (International Master's Programme in Information Technology)

- University of Joensuu, Joensuu, Finland, Department of Computer Science, Prof. Jussi Parkkinen, Dr. Markku Hauta-Kasari – multispectral colour image processing, exchange of students
- Technische Universität Wien, Institut für Komputergrafik, Thomas Theußl – Annual international students' seminar CESGC (Central European Seminar on Computer Graphics)
- Oregon Health and Science University, Oregon Graduate Institute, Oregon, USA, Prof. Misha Pavel – speech processing, robust detection of phonemes, exchange of Ph.D. students
- ESIEE Paris, Paris, Francie, Prof. Genevieve Baudoin – speech processing, very low bit-rate speech coding, exchange of Ph.D. students
- Department of computer graphics and image processing, Faculty of Mathematics, Physics and Informatics, Comenius University, Bratislava, Slovak Republic, Dr. Andrej Ferko – Annual international students' seminar CESGC (Central European Seminar on Computer Graphics)

Visitors to the Department

- Dr. Lukas Paletta. Joanneum Research Inistitute, Graz, Austria, October 2003
- Dr. Alan G. Chalmers, University of Bristol, Bristol, UK, November 2003
- Prof. Genevieve Baudoin, ESIEE, Paris, France

Visits of Staff Members to Foreign Institutions

- University of Joensuu, Joensuu, Finland, SOCRATES/ERASMUS, Doc. Dr. Ing. Pavel Zemčík, May 2003
- University of Bristol, Bristol, UK, SOCRATES/ERASMUS, Doc. Dr. Ing. Pavel Zemčík, Ing. Adam Herout, October 2003
- University of Surrey, Guildford, UK, SOCRATES/ERASMUS, Doc. Dr. Ing. Pavel Zemčík, Ing. Adam Herout, October 2003
- Oregon Graduate Institute at OHSU, Portland, OR, USA, M4, Ing. Pavel Matějka and Ing. Petr Schwarz, January-July 2003
- University of Sheffield, Sheffield, UK, SOCRATES/ERASMUS, Ing. Martin Karafiát, April-December 2003
- ESIEE, Paris, France, committee member for the defence of Ph.D. dissertation, Doc. Dr. Ing. Jan Černocký, December 2003
- University of Sheffield, Sheffield, UK, M4, Doc. Dr. Ing. Jan Černocký, Doc. Dr. Ing. Pavel Zemčík, April 2003
- University of Delft, Delft, The Netherlands, M4, Doc. Dr. Ing. Jan Černocký, Doc. Dr. Ing. Pavel Zemčík, September 2003
- IST Days, Milano, Italy, M4, Ing. Lukáš Burget, October 2003
- University La Rochelle, within the SOCRATES/IP project, Dr. Ing. Přemysl Kršek, June 2003
- IDIAP, Martigny, Switzerland, M4, Ing. Stanislav Sumec, November 2003
- University of Munich, Munich, Germany, M4, Ing. Igor Potůček, November 2003
- Helsinki University of Technology, Helsinki, Finsko, invited by the university, Ing. Martin Dobšík, January-December 2003

Agreements

Co-operation agreements within the Socrates/Erasmus programme made with:
- Helsinki University of Technology, http://www.hut.fi/English/, Finland
- Lappeenrannan University of Technology, http://www.lut.fi/english/html, Finland
- University of Joensuu, http://www.joensuu.fi/englishindex.html , Finland
- École Supérieure d`Ingénieurs en Électrotechnique, http://www.esiee.fr/, France
- Universite la Rochelle, http://www.univ-lr.fr/, France
- Utrecht University,http://www.uu.nl/uupublish/homeuu/homeenglish/1757main.html, Netherlands
- Universidade de Trás-os-Montes e Alto Douro, http://www.utad.pt, Portugal
- Graz University of Technology, http://www.tugraz.at/, Austria
- University of Surrey, http://www.surrey.ac.uk, UK
- University of Bristol, http://www.bris.ac.uk/, UK
- University of Sheffield, http://www.shef.ac.uk, UK

Membership in Organizations and Societies

- Černocký Jan, Doc. Dr. Ing.,
    - IEEE (Secretary of the Czech Section)
    - ISCA (International speech communication assocation).

- Dobšík Martin, Ing.,
    - ACM, SIGGRAPH
    - Czech and Slovak Simulation Society (CSSS)
- Kršek Přemysl, Dr. Ing.
    - ACM
- Zemčík Pavel, Doc. Dr. Ing.,
    - ACM,SIGHCI
    - IEEE

Publications:

Books:

Černocký Jan: Temporal processing for feature extraction in speech recognition, Brno, CZ, VUTIUM, 2003, p. 30, ISBN 80-214-2395-1

Conference :

Crha Luděk, Fučík Otto, Zemčík Pavel, Drábek Vladimír, Tupec Pavel: Inter Chip Communicating System with Dynamically Reconfigurable Hardware Support, Poznaň, PL, 2003, pp. 311-312, ISBN 83-7143-557-6

Potúček Igor: Person tracking using omnidirectional view, In: Vědecký sborník, CZ, pp. 603-607, ISBN 80-214-2379, ISSN 0572-3043

Zemčík Pavel: Education and Industry - Czech Experience, Heraklion, GR, TEI Heraklion, 2003, pp. 49-53, ISBN 960-85316-7-5

Čapek Daniel, Herout Adam: Fast and believable face animation – practical approach, In: Applied Simulation and Modelling, Calgary, CA, ACTA Press, 2003, pp. 335-340, ISBN 0-88986-384-9

Fĕdor Martin: Application of Inverse Kinematics for Skeleton Manipulation in Real-time, In: Proceeding of Spring Conference on Computer Graphics 2003, Bratislava, SK, 2003, pp. 201-210

Frydrych Michael, Dobšík Martin: Toolkit for Animation of Finnish Talking Head, In: ISCA Tutorial and Research Workshop on Audio Visual Speech Processing (AVSP'03), St Jorioz France, FR, 2003, pp. 199-204, ISSN 1680-8908

Grézl František, Heřmanský Hynek: Local averaging and differetiating of spectral plane for TRAP-based ASR,In: Proc. EUROSPEECH 2003, Geneva, CH, IDIAP, 2003, p. 4, ISSN 1018-4074

Grézl František: Local time-frequency operators in TRAPs for speech recognition, In: 6th International Conference, TSD 2003 České Budějovice, Czech Republic, September 2003 Proceedings, České Budějovice, CZ, ZČU Plzen, 2003, pp. 269-274, ISBN 3-540-20024-X, ISSN 0302-9743

Grézl František: Effect of normalization on TRAP-based systems in ASR, In: Proc. 13th International scientific conference Radioelektronika 2003, Brno, CZ, UREL FEKT BUT, 2003, p. 4, ISBN 80-214-2383-8

Herout Adam, Řezáč David, Tišnovský Pavel: Visualization of 3D potential fields computed using TKSL/C, In: Proceedings of the 9th Conference and Competition STUDENT EEICT 2003, Brno, CZ, FEKT BUT, 2003, pp. 583-587, ISBN 80-214-2379-X

Herout Adam, Řezáč David, Tišnovský Pavel: Visualization of 3D potential fields computed using TKSL/C, In: Proceedings of the International Conference and Competition STUDENT EEICT 2003, Brno, CZ, 2003, pp. 310-314

Jenderka Petr, Vícha Tomáš: Voice Activity Detection in Multimodal Meeting Manager, In: Proceedings of 9th Conference and Competition STUDENT EEICT 2003, Volume 3, Brno, CZ, FEKT BUT, 2003, pp. 588-592, ISBN 80-214-2379-X

Kršek Přemysl, Krupa Petr: Geometric modelling of human tissues, In: Applied Simulation and Modeling, Calgary, CA, IASTED, 2003, pp. 357-362, ISBN 0-88986-384-9

Matějka Pavel, Schwarz Petr, Grézl František, Černocký Jan: Phoneme Classification using Temporal Patterns, In: Proc. 13th International scientific conference Radioelektronika 2003, Brno, CZ, 2003, p. 4

Matějka Pavel, Schwarz Petr, Heřmanský Hynek, Černocký Jan: Phoneme Recognition using Temporal Patterns, In: Proc. 6th International Conference Text, Speech and Dialogue, TSD2003, České Budějovice, CZ, 2003, p. 8

Motlíček Petr, Černocký Jan: All-pole modelling for definition of speech features for Aurora 3 DSR task, In: 6th International Conference, TSD 2003 České Budějovice, Czech Republic, September 2003 Proceedings, České Budějovice, CZ, ZČU v Plzni, 2003, pp. 295-300, ISBN 3-540-20024-X, ISSN 0302-9743

Motlíček Petr, Černocký Jan: Autoregressive modelling based feature extraction for AURORA3 DSR task, In: Proc. EUROSPEECH 2003, Geneva, CH, IDIAP, 2003, pp. 1801-1804, ISSN 1018-4074

Motlíček Petr, Černocký Jan: Time-domain based temporal processing with application of orthogonal transformations, In: Proc. EUROSPEECH 2003, Geneva, CH, IDIAP, 2003, pp. 821-824, ISSN 1018-4074

Motlíček Petr: Modelling of spectra and temporal trajectories in speech processing, In: Sborník příspěvků a prezentací akce Odborné semináře 2003, Brno, CZ, UREL FEKT BUT, 2003, p. 28

Motlíček Petr: Derivation of TRAPs in auditory domain, In: Proceedings of 9th Conference and Competition STUDENT EEICT 2003, Brno, CZ, FEKT BUT, 2003, pp. 598-602, ISBN 80-214-2379-X

Motlíček Petr: Derivation of TRAPs in auditory domain, In: Proceedings of the International Conference and Competition, Brno, CZ, FEKT BUT, 2003, pp. 315-319, ISBN 80-214-2401-X

Schwarz Petr, Matějka Pavel, Černocký Jan: Recognition of phoneme strings using TRAP technique, In: Proceedings of 8th International Conference Eurospeech, Geneve, CH, 2003, p. 4

Schwarz Petr: Would You Like To Make Your Programs Understand Human Voice?, In: Proceedings of 9th Conference STUDENT EEICT 2003, Brno, CZ, 2003, p. 5

Szöke Igor: Prosodic modification of synthetic speech, In: Proceedings of The International Conference and Competition STUDENT EEICT 2003, Brno, CZ, FEKT BUT, 2003, pp. 349-352, ISBN 80-214-2401-X

Španěl Michal, Zemčík Pavel: Face Representation and Tracking Using Gabor Wavelet Networks, In: Proceedings of the Central European Seminar on Computer Graphics, Budmerice, SK, 2003, pp. 163-169

Španěl Michal: Face Representation and Tracking Using Gabor Wavelet Networks, In: Proceedings of the International Conference and Competition STUDENT EEICT 2003, Brno, CZ, FEKT BUT, 2003, pp. 303-305, ISBN 80-214-2401-X

Zemčík Pavel, Herout Adam, Tišnovský Pavel: Particle Rendering Pipeline, In: Spring Conference on Computer Graphics 2003 Proceedings, Bratislava, SK, STUBA, 2003, pp. 180-186, ISBN 80-223-1837-X

Journals:

Herout Adam, Tišnovský Pavel: Mass and spring particle system on parallel architecture with the support of DSP and FPGA, In: Elektrorevue - www.elektrorevue.cz, vol. 2003, No. 25, Brno, CZ, pp. 1-18, ISSN 1213-1539

Karafiát Martin, Grézl František: Using MATLAB for Analysis of TRAP system, In: Radioengineering, vol. 2003, No. 4, CZ, pp. 38-41, ISSN 1210-2512

Pečiva Jan: Open Inventor Tutorial, In: ROOT, information not only from Linux world, vol. 2003, No. 1775, Praha, CZ, p. 100, ISSN 1212-8309

Petyovský Petr, Tišnovský Pavel: Linearized Iterated Function Systems, In: Elektrorevue - www.elektrorevue.cz, vol. 2003, No. 19, Brno, CZ, pp. 1-25, ISSN 1213-1539

Potúček Igor: Tracking movement objects in sequence pictures, In: ElectronicsLetters.com, vol. 2003, No. 2, Brno, CZ, p. 10, ISSN 1213-161X

Sumec Stanislav: Parallel Computing of Ray Tracing, In: ElectronicsLetters.com, vol. 2003, No. 4, Brno, CZ, p. 15, ISSN 1213-161X

Tišnovský Pavel, Herout Adam, Zemčík Pavel: Cache-Based Parallel Particle Rendering Engine, In: ElectronicsLetters.com, vol. 2003, No. 1, Brno, CZ, p. 8, ISSN 1213-161X

Tišnovský Pavel: Non-contact digitization of 3D objects using Minolta Vivid VI-700 3D scanner, In: Elektrorevue - www.elektrorevue.cz, vol. 2003, No. 13, Brno, CZ, pp. 1-25, ISSN 1213-1539

Tišnovský Pavel: OpenGL Graphics Library, In: ROOT, information not only from the Linux world, vol. 2003, No. 1713, Praha, CZ, p. 100, ISSN 1212-8309

Tišnovský Pavel: Methods for creation and visualization of elastic solids using systems of coupled particles, In: Elektrorevue - www.elektrorevue.cz, vol. 2003, No. 6, Brno, CZ, pp. 1-15, ISSN 1213-1539

Tišnovský Pavel: Platform independent graphical application development using GLUT library, In: ROOT, information not only from the Linux world, vol. 2003, No. 1612, Praha, CZ, p. 50, ISSN 1212-8309

Dissertation:

Motlíček Petr: Modelling of Spectra and Temporal Trajectories in Speech Processing, Ph.D. thesis, Brno, CZ, FIT BUT, 2003, pp. 1-138

Patents:

Zařízení pro kontrolu malých objektů, reg.: 2001, approval: 2003, expiration: -
Authors: Fučík Otto, Honec Jozef, Richter Miroslav, Zemčík Pavel
Patent owner: Camea spol. s r.o.

Zařízení pro kontrolu povrchu, reg.: 2001, approval: 2003, expiration: -
Authors: Fučík Otto, Honec Jozef, Richter Miroslav, Zemčík Pavel
Patent owner: Camea spol. s r.o.

Zařízení pro kontrolu rozměrů, reg.: 2001, approval: 2003, expiration
Authors: Fučík Otto, Honec Jozef, Richter Miroslav, Zemčík Pavel
Patent owner: Camea, spol. s r.o.

Products:

DSP Processing Accelerator(DX6), 2003
Authors: Fučík Otto, Zemčík Pavel

IPV6 Router Accelerator, 2003
Authors: Fučík Otto, Novotný Jiří, Zemčík Pavel

FPGA-Based Particle Rendering Unit, 2003
Authors: Crha Luděk, Fučík Otto, Herout Adam, Tupec Pavel, Zemčík Pavel

Road Speed Measurement, 2003
Authors: Fučík Otto, Honec Jozef, Richter Miroslav, Zemčík Pavel

System for Continuous Measurement of Textile, 2003
Authors: Fučík Otto, Honec Jozef, Richter Miroslav, Zemčík Pavel

System for Continuous Measurement of Steam-permeable Foils, 2003
Authors: Fučík Otto, Honec Jozef, Richter Miroslav, Zemčík Pavel

System for Stereophotogrammetric Measurement of Welding of Automobile Wheel Discs, 2003
Authors: Fučík Otto, Honec Jozef, Richter Miroslav, Zemčík Pavel

DEPARTMENT OF COMPUTER SYSTEMS

Department of Computer Systems provides tuition in the MSc. specialization **Computer Systems and Networks** which covers processor and computer architecture, Data communication, communication protocols and computer networks, development of network-based, Internet, parallel and embedded applications, design of hybrid HW/SW systems and their spacification, digital signal processing, Design of spacialized interfaces, including interfaces to the Internet. Besides, the Department is also in charge of teaching a number of courses in the Bachelor's study programme **Information Technology**.

Research activities of the Department are focused on architecture of HW/SW of embedded systems, parallel performance prediction and tuning, specification and design of computer-based systems and their mutual communication. Other research topics are: image processing and applied genetic and evolutionary algorithms, including evolvable hardware.

The main areas of interest are the following:

- application-specific architectures: high-performance embedded systems, multiprocessor systems on a chip (MPSoC) and re-configurable systems ,

- performance prediction and tuning of parallel applications (neural networks, large systems of linear equations, signal processing algorithms),

- evolvable digital architectures,

- formal approaches to digital circuit diagnostics,

- applied evolutionary algorithms, and

- diagnostics, testability and safety.

The lectures in most courses are supplemented with projects of laboratory sessions, where students acquire useful experience and skills with the latest software packages and hardware units (workstations, multiprocessor systems, workstation clusters, RT OS, design systems FPGA and the like), learn basics of teamwork and project management. For the most demanding projects there is access to the Supercomputing Centre of BUT possible.

Staff

Head of Department
Dvořák Václav, Prof. Ing., DrSc.
Deputy Head of Department
Kotásek Zdeněk, Doc. Ing., CSc.
Professors
Dvořák Václav, Prof. Ing., DrSc.
Associate Professors
Drábek Vladimír, Doc. Ing., CSc.
Kotásek Zdeněk, Doc. Ing., CSc.
Linhart Miroslav, Doc. Ing., CSc.
Schwarz Josef, Doc. Ing., CSc.

Lecturers

Eysselt Miloš, Ing., CSc.

Fučík Otto, Dr. Ing.

Růžička Richard, Ing., Ph.D.

Sekanina Lukáš, Ing., Ph.D.

Assistant

Strnadel Josef, Ing.

Ph.D. Students

Crha Luděk, Ing.

Friedl Štěpán, Ing.

Jaroš Jiří, Ing.

Kořenek Jan, Ing.

Kutálek Vladimír, Ing.

Martínek Tomáš, Ing.

Mika Daniel, Ing.

Ohlídal Miloš, Ing.

Pečenka Tomáš, Ing.

Staroba Jiří, Ing.

Tupec Pavel, Ing.

Urbiš Hynek, Ing.

Equipment

Laboratory of Embedded Systems

6 work sites equipped with FUJITSU DevKit16 for the development of advanced embedded applications including special peripheries in FPGA, and use of modern design systems "Processor Expert", UNIS.

8 work sites equipped with development kits HC11 EVBU for the development of simple embedded applications with the use of the most widely spread MCU Motorola.

Laboratory of DSP Systems

1 work site for developing DSP applications with DSP56000 processors, Motorola.

8 work sites equipped with DSK6414 kits, Texas Instruments for work with high-performance VLIW DSP processors TMS320C6414.

Computer Peripheral Laboratory

The bench for tuition support and development of PC fieldbuses – a special adapter (developed at the FIT), PCI Spartan fieldbus development kit with FPGA, Agilent 32-channel logic analyser

Input peripheral devices bench – a keyboard and its controller (a special-purpose set-up for demonstration), tablet Genius NewSketch, desktop scanner HP 5300C.

Output peripheral devices bench – ink printer HP DesignJet 488CA with HPGL and PCL graphic languages, Roland x/y plotter with HPGL language.

Digital computer/analog environment interface – Cards with Advantech PCI 1710 A/D converters, Advantech switching network, digital oscilloscope Agilent 54622A, and MS 9160 – function generator and counter.

Digital interfaces bench - cards for PC / devices with RS-232, RS-485, RS-422, GPIB .

External memory bench - interface and IDE a SCSI, SCSI-2 discs.
A bench for development teaching kits, memory programmer, programmable logic and Elnec LabProg 48LV processors, soldering station, measuring instruments, and power sources.

Tuition

Abbr.	Course	Sem	Cr.	Hours	Lecturer
EVA	Applied evolution algorithms	L	6	39-0-0-8-18	Schwarz Josef, Doc. Ing., CSc.
AMC	Applied microcomputers	L	6	26-0-26-0-13	Schwarz Josef, Doc. Ing., CSc.
ARP	Computer architecture	Z	6	39-18-0-8-0	Dvořák Václav, Prof. Ing., DrSc.
CIO	Digital and impulse circuits	Z	6	26-14-0-12-13	Schwarz Josef, Doc. Ing., CSc.
CZS	Digital signal processing	Z	6	39-0-0-10-16	Fučík Otto, Dr. Ing.
DIA	Diagnostics and safe systems	Z	6	39-0-12-0-14	Drábek Vladimír, Doc. Ing., CSc.
FF1	Finnish language	Z	2	0-26-0-0-0	Eysselt Miloš, Ing., CSc.
GMP	Graphics processors	Z	6	39-0-0-13-13	Drábek Vladimír, Doc. Ing., CSc.
FA9	Professional English for Informatics	L	3	0-39-0-0-0	Eysselt Miloš, Ing., CSc.
LOS	Logical Systems	Z	5	39-18-0-0-8	Eysselt Miloš, Ing., CSc.
NCS	Modern design of digital systems	Z	6	39-0-0-10-16	Fučík Otto, Dr. Ing.
INC	Design of digital systems	L	5	39-10-0-0-3	Fučík Otto, Dr. Ing.
INP	Design of computer systems	Z	5	39-5-0-4-4	Drábek Vladimír, Doc. Ing., CSc.
PDD	Parallel and distributed programming	Z	0	39-0-0-0-0	Dvořák Václav, Prof. Ing., DrSc.
PZ1	Peripheral devices 1	L	6	39-0-12-0-14	Kotásek Zdeněk, Doc. Ing., CSc.
PZ2	Peripheral devices 2	Z	6	39-0-12-0-14	Kotásek Zdeněk, Doc. Ing., CSc.
PTP	PCs, technical maintenance	L	6	26-0-0-39-0	Kotásek Zdeněk, Doc. Ing., CSc.
PPP	Practical parallel programming	L	6	39-0-0-26-0	Dvořák Václav, Prof. Ing., DrSc.
PTD	Principles of testable circuits synthesis	Z	0	39-0-0-0-0	Kotásek Zdeněk, Doc. Ing., CSc.

SOD	Fault-tolerant systems	Z	4	39-0-0-0-0	Drábek Vladimír, Doc. Ing., CSc.
SOP	Fault-tolerant systems	L	6	39-0-0-0-26	Drábek Vladimír, Doc. Ing., CSc.
SOD	Fault-tolerant systems	L	0	39-0-0-0-13	Drábek Vladimír, Doc. Ing., CSc.
VPO	Computer architecture	L	6	39-14-6-0-6	Drábek Vladimír, Doc. Ing., CSc.
ZPX	Professional training abroad	Z	5	0-0-0-0-0	Drábek Vladimír, Doc. Ing., CSc.
ZPX	Professional training abroad	L	5	0-0-0-0-0	Drábek Vladimír, Doc. Ing., CSc.

Research Projects

Formal approach to digital circuits test scheduling, GAČR, GA102/03/P176, 2003-2005
Research leader: Růžička Richard

Methods of test controller design for embedded systems, FRVŠ MŠMT, FR834/2003/G1, 2003
Research leader: Mika Daniel
Team leader: Kotásek Zdeněk

Application design methods based on evolvable hardware, GAČR, GA102/03/P004, 2003-2005
Research leader: Sekanina Lukáš

Tools for support of formal specification and verification of UML-based diagrams, FRVŠ MŠMT, FR838/2003/G1, 2003
Research leader: Ryšavý Ondřej
Team leader: Dvořák Václav

3C Research - Convergent technology research for digital media processing and communications, Rendering on demand, 3C Research, 2003
Team leaders: Fučík Otto, Zemčík Pavel

Computer graphics algorithms with FPGA support, GAČR, GA102/02/0507, 2002-2003
Research leader: Zemčík Pavel

Parallel system performance prediction and tuning, GAČR, GA102/02/0503, 2002-2004
Research leader: Dvořák Václav

 Formal approaches in digital design diagnostics – testable design verification, GAČR, GA102/01/1531, 2001-2003
Research leader: Kotásek Zdeněk
Team leaders: Drábek Vladimír, Růžička Richard, Sekanina Lukáš, Strnadel Josef, Zbořil František

Research in information and control systems, CEZ MŠMT, MSM 262200012, 1999-2003
Research leader: Honzík Jan M.
Team leaders: Češka Milan, Zendulka Jaroslav, Zezulka František

Co-operation

Co-operation in the Czech Republic

- Camea, s.r.o., Brno

- UNIS, s.r.o., Brno

- ASICentrum, Praha

- Institute of Informatics and Automation, AV ČR

- Department of Informatics FEI, Technical University of Mining and Metallurgy, Ostrava

- Computer Department FEL, Czech Technical University, Prague

- Department of Electrical Measurement, Technical University of Mining and Metallurgy, Ostrava

- Faculty of Mechatronics, Liberec University of Technology

- Faculty of Applied Sciences, University of West Bohemia, Plzeň

- Department of Computer Science, Masaryk University in Brno

- Cesnet

International Co-operation

- Institute of Informatics, Slovak Academy of Sciences

- Technical University in Tallin, Estonia

- Department of Informatics, University of Oslo, Norwey

- Pennsylvania State University, The Behrend College, Erie, USA

- Cell Matrix Corp., USA

- University of Aveiro, Portugal

- Univesity of Wyoming, USA

- Dept. of Statistics, Operational Research and Computing, La Laguna University, Tenerife, Spain

- Computational Laboratory (CoLab), Swiss Federal Institute of Technology (ETH) Zürich, Switzerland

Visits of the Staff in Other Institutions

- Topic: Communication Architectures for Application-Specific Multiprocessor Systems (on a Chip)
  Lecturer: Prof. Ing. Václav Dvořák, DrSc
  Event: 7th seminar in Last Advances in Computer Science: Processors, Memories and Programming
  Date: 13th March 2003 (2 hours), La Laguna University, Tenerife, Spain
- Topic: Parallel system architectures and programming.
  Participant: Prof. Ing. Václav Dvořák, DrSc
  Event: work on a joint textbook (teaching texts) with Prof. Casiano R. Leon
  Place: Dept. of Statistics, Operational Research and Computing, La Laguna University, Tenerife, Spain.
  Date: February-April 2003.
- Topic: Component Approach to Evolvable Systems
  Lecturer: Ing. Lukáš Sekanina, Ph.D.
  Date: 10th January 2003 (2 hours) UTIA AV ČR and CAK in Prague
- Topic: Theory of Evolvable Systems
  Lecturer: Ing. Lukáš Sekanina, Ph.D.
  Date: 10th March 2003 (1 hour), Institute of Informatics, Academy of Science in Prague, Czech Republic

Membership in Organizations and Societies

- Drábek Vladimír, Doc. Ing., CSc.,

  - o Czech Society for Cybernetics and Informatics

  - o Czech Electrical Engineering Society

  - o Czech and Slovak Simulation Society (CSSS)

  - o EvoNet - The European Network of Excellence in Evolutionary Computing

- Dvořák Václav, Prof. Ing., DrSc.,

  - o IEEE - Computer Society, 1991 -

  - o Editorial Board JUCS, Journal of Universal Computer Science, since 1994

  - o Editorial Board JEE - Journal of Electrical Engineering (Bratislava, Slovakia), since 1996

- Eysselt Miloš, Ing., CSc.,
  - o IGIP (Internationale Gesellschaft für Ingenieurpädagogik / International Society for Engineering Education, A, Klagenfurt).
- Fučík Otto, Dr. Ing.,
  - o IEEE - Computer Society, since 1998

- Růžička Richard, Ing., Ph.D.,

  - [EvoNet - The European Network of Excellence in Evolutionary Computing](#)

- Sekanina Lukáš, Ing., Ph.D.,

  - [EvoNet - The European Network of Excellence in Evolutionary Computing](#)

- Schwarz Josef, Doc. Ing., CSc.,

  - Czech and Slovak simulation Society (CSSS)

  - [EvoNet - The European Network of Excellence in Evolutionary Computing](#)

Publications

Books:

Sekanina Lukáš: Evolvable Components - From Theory to Hardware Implementations, Berlin, DE, Springer, 2003, p. 194, ISBN 3-540-40377-9

Conferences:

Crha Luděk, Fučík Otto, Zemčík Pavel, Drábek Vladimír, Tupec Pavel: Inter Chip Communicating System with Dynamically Reconfigurable Hardware Support, Poznaň, PL, 2003, pp. 311-312, ISBN 83-7143-557-6

Crha Luděk: Single chip FPGA realization of a 2D multicomponent wavelet transform, Rome, IT, 2003, p. 1

Drábek Vladimír: Montgomery Multiplication in GF(p) and GF(2^n), Brno, CZ, BUT, Brno, 2003, pp. 106-109, ISBN 80-214-2452-4

Kotásek Zdeněk, Růžička Richard, Sekanina Lukáš: Proceedings of "Computer Architectures & Diagnostics" workshop for Ph.D. students, Brno, CZ, UPSY FIT BUT, 2003, p. 84, ISBN 80-214-2471-0

Crha Luděk: CPLD, FPGA and DSP communication, In: Proceedings of the 9th Conference and Competition STUDENT EEICT 2003, Brno, CZ, 2003, p. 619-623, ISBN 80-214-2379-X

Crha Luděk: New Compression Methods, In: Proceedings of "Computer Architectures & Diagnostics" workshop, Brno, CZ, FIT BUT, 2003, p. 3, ISBN 80-214-2471-0

Crha Luděk: 2D Multicomponent Wavelet Transform, In: Preprints of IFAC Workshop on Programmable Devices and Systems Conference, Ostrava, CZ, 2003, p. 1

Dvořák Václav, Kutálek Vladimír: A Methodology for Designing Communication Architectures for Multiprocessor SoCs, In: Proceedings EUROMICRO Symposium on Digital

System Design - Architectures, Methods and Tools DSD 2003, Belek, TR, IEEE CS, 2003, pp. 455-458, ISBN 0-7695-2003-0

Dvořák Václav, Staroba Jiří: Genetic Search for the Shortest Group Communications on Irregular Topologies, In: Proceedings of XXVth International Autumn Colloquium ASIS 2003, Ostrava, CZ, MARQ, 2003, pp. 321-326, ISBN 80-85988-88-7

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Schwarz Josef, Očenášek Jiří: Accelerated Bayesian Optimization Algorithms for Advanced Hypergraph Partitioning, accepted paper, In: Proceedings of MENDEL 2003, Brno, CZ, FSI BUT, 2003, pp. 133-141, ISBN 80-214-2411-7

Sllame Azeddien M.: A Pipeline Scheduling Algorithm for High-Level Synthesis, In: Proc. of IFAC Workshop on Programmable Devices and Systems Conference, Ostrava, CZ, 2003, pp. 178-183

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Habilitation:

Schwarz Josef: Bayesian evolutionary algorithms applied in decomposition and allocation problems, habilitation, Brno, CZ, FIT BUT, 2003, pp. 1-124, a shortened version, VUTIUM, 2003, pp. 1-32, ISBN 80-214-2389-7

Dissertation:

Sllame Azeddien M.: Design Space Exploration of High-Performance Digital Systems, Brno, CZ, 2003, pp. 1-125

Očenášek Jiří: Parallel evolutionary algorithms using probabilistic models, Brno, CZ, 2003, p.150

Teaching Texts:

Drábek Vladimír: Diagnosis and testing, Student e-text for DIA, study program IT, Brno, CZ, FIT BUT, 2003, p. 90

Eysselt Miloš: Digital Systems Design: Basic Set of Problems 1 - SSI Circuits Networks, Brno, CZ, UPSY FIT BUT, 2003, p. 34

Manuals:

Eysselt Miloš: Old-curriculum Computer Science and Engineering Study Programmes at the FIT in 2003/2004: The first level of Master (EI-MGR-5) and Bachelor (EI-BC-3) study programmes and the Comprehensive Exam, Brno, CZ, FIT BUT, 2003, p. 21

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Eysselt Miloš: Digital Systems Design: Slides 2003 - Basic Support of Lectures and Practice, Brno, CZ, UPSY FIT BUT, 2003, p. 54

Patents:

Zařízení pro kontrolu malých objektů, reg.: 2001, approval: 2003, expiration: -
Authors: Fučík Otto, Honec Jozef, Richter Miroslav, Zemčík Pavel

Owner: Camea spol. s r.o.

Zařízení pro kontrolu povrchu, reg.: 2001, approval: 2003, expiration: -
Authors: Fučík Otto, Honec Jozef, Richter Miroslav, Zemčík Pavel
Owner: Camea spol. s r.o.

Zařízení pro kontrolu rozměrů, reg.: 2001, approval: 2003, expiration: -
Authors: Fučík Otto, Honec Jozef, Richter Miroslav, Zemčík Pavel
Owner: Camea, spol. s r.o.

Products

DSP Processing Accelerator(DX6), 2003
Authors: Fučík Otto, Zemčík Pavel
IPV6 Router Accelerator, 2003
Authors: Fučík Otto, Novotný Jiří, Zemčík Pavel

FPGA-Based Particle Rendering Unit, 2003
Authors: Crha Luděk, Fučík Otto, Herout Adam, Tupec Pavel, Zemčík Pavel

Road Speed Measurement, 2003
Authors: Fučík Otto, Honec Jozef, Richter Miroslav, Zemčík Pavel

System for Continuous Measurement of Textile, 2003
Authors: Fučík Otto, Honec Jozef, Richter Miroslav, Zemčík Pavel

System for Continuous Measurement of Steam-permeable Foils, 2003
Authors: Fučík Otto, Honec Jozef, Richter Miroslav, Zemčík Pavel

System for Stereophotogrammetric Measurement of Welding of Automobile Wheel Discs, 2003
Authors: Fučík Otto, Honec Jozef, Richter Miroslav, Zemčík Pavel

COMPUTER CENTRE

The Computer Centre is a self-contained part of the **Faculty of Information Technology**. It guarantees the running of computer laboratories, both local and faculty net, servers and information systems. The computer laboratories of the Centre are utilised both for scheduled tuition and for work on projects, diploma theses and research projects.

Staff

Head
> Lampa Petr, Ing.

Deputy Head
> Čejka Rudolf, Ing.

Centre Manager
> Dupalová Helena

System Integrator
> Gaďorek Petr, Ing.

Information System Administrator
> Michal Bohumil, Ing.

Computer Network Administrator
> Lampa Petr, Ing.

OS Administrator
> Čejka Rudolf, Ing.
> Kašpárek Tomáš, Ing.

Technical and Administrative Staff
> Kappler Karel
> Kreslík František, Ing.

Programmer
> Skokanová Jana, Mgr.

Attendants
> Almášiová Květoslava
> Habrdová Stella
> Nečasová Milena
> Samsonová Radomíra
> Duránik Lukáš

Equipment

Teaching and Research Laboratories

- Laboratory with SUN Ultra 5 (20 workstations)
- Laboratories with personal computers and Windows XP or Linux systems (90 workstations)
- Multimedia laboratory equipped with 3D accelerators and Windows NT or Linux (22 workstations)

Open Computer Laboratories

- 2 unscheduled Internet laboratories open to all students of the Faculty (total of 42 computers + 2 connecting points for notebooks)
- WiFi net for access from students notebooks in the Centre as well as in lecture halls, library and other rooms.

Special Instrumentation and Computers

- IBM BladeCenter server with 12 modules with Intel Xeon 2,8GHz processors, 512MB oper. memory. The modules are connected to an internal Gigabit switch and each of them has a capacity of a server.
- RAID-5 disk field with a capacity of 1,4 TB, for storing and processing speech signals.
- Supermicro 7043P research server with 2 Intel Xeon processors 3,06 GHz and 2 GB oper. memory.
- Students' server (Web, email, file server), 2 Intel Pentium III/800 MHz processors, 640 MB RAM, RAID-5 disk field with a capacity of 240 GB.
- Novell NetWare student and staff server with 2 Intel Pentium III/800 MHz processors, 512 MB RAM, 140 GB RAID-5 disc capacity, with a 1 Gb/s network card.
- FTP archive with a RAID-5 disk field, 460 GB capacity.
- Computer network based on Gigabit switches at the 3rd level - Extreme Networks Black Diamond 6808 and Summit 48. Most servers are connected by gigabit Ethernet.
- A3 HP LaserJet 8150 and A4 HP LaserJet 4300 high performance network printers, and Tektronix Phaser 740Plus colour printer.

Software

- Oracle 9i, including development tools (in the framework of Oracle academic programme).
- Centura Team Developer development tools and SQLBase database server (a gift within "Centura Scientific Partner" programme).
- Object-oriented CASE system Paradigm Plus by Computer Associates.
- OrCAD a ModelSim FL systems.
- Software in the framework of Microsoft Academic Alliance programme (development tools).
- Borland Pascal, C++, Delphi, C++ Builder.
- Adobe Photoshop, Autodesk 3D studio, Caligari TrueSpace.
- GNU Software, Te X, Linux, FreeBSD, MySQL, Apache servers, PHP4.

Tuition

Abbr	Course	Sem	Cr.	Hours	Lecturer
GUR	Graphical User Interface	Z	5	26-0-0-8-18	Lampa Petr, Ing.
OS2	Operating Systems 2	L	6	39-0-0-8-18	Lampa Petr, Ing.

Research Projects

Collaborative virtual environments, CESNET, 049/2003, 2003
Research leader: Zemčík Pavel
Team leaders: Kašpárek Tomáš, Kršek Přemysl

Online lecture streaming in high-speed network, CESNET, CESNET045/2003, 2003-2004
Research leader: Lampa Petr
Team leaders: Michal Bohumil

SPEECON – Speech driven interfaces for consumer applications, EU-HLT, IST-1999-10003, 2003
Research leader: Pollák Petr
Team leaders: Černocký Jan, Jenderka Petr, Kašpárek Tomáš, Otáhalová Sylva

Supercomputer laboratory-PC cluster, FRVŠ MŠMT, FR0956/2003/A, 2003
Research leader: Jícha Miroslav
Team leaders: Lampa Petr

Parallel System Performance Prediction and Tuning, GAČR, GA102/02/0503, 2002-2004
Research leader: Dvořák Václav

Research in Information and Control Systems, CEZ MŠMT, MSM 262200012, 1999-2003
Research leader: Honzík Jan M.
Team leaders: Češka Milan, Zendulka Jaroslav, Zezulka František

Visits of Staff Members to Foreign Institutions

- Kašpárek Tomáš, Ing., Herterkom Budapešť, Budapešť, HU, 3 days

- Lampa Petr, Ing., in Phase Fernseh-Studiotechnik AG, Schloßstraße 18, Odelzhausen, 49 (0) 8134 / 5551-0, DE, 2 days

Membership in International Institutions and Societites

- Čejka Rudolf, Ing.,

    o [Czech and Slovak Society of TeXu Users (CSTUG)](#)

    o Czech and Slovak Simulation Society (CSSS)

- Lampa Petr, Ing.,
    o Usenix, Sage

Publications

Conferences:

Kašpárek Tomáš: ALSA pro Compaq iPAQ, In: Conference proceedings - OpenWeekend 2003, Praha, CZ, SU CVUT, 2003, pp. 59-65, ISBN 80-01-02723-6

Products

Information System for the FIT, 2003
Author: Lampa Petr