Institute of Control and Computation Engineering

2002 Annual Report

From the Director

The Institute of Control and Computation Engineering (ICCE, Polish: Instytut Automatyki i Informatyki Stosowanej) was created in 1955 as the Chair of Automatic Control and Telemechanics by Professor Władysław Findeisen. It was reorganized in 1970 to the Institute of Automatic Control. Rapid development of microprocessor technology and its impact on the field of control in recent years directed the interest of staff and students towards computational and algorithmic aspects of control, decision support, man-machine interfacing, etc. This resulted in creation of new educational profiles offered by the Institute and a change of its name to the present one in 1994. Professor Władysław Findeisen has been the Director of the Institute until he was elected the Rector of the Warsaw University of Technology in 1981. His achievements were recognized worldwide. He is Doctor Honoris Causa of the City University London, Warsaw University of Technology, Technical University of Gdańsk, and Technical University of Ilmenau.

The Institute offers educational possibilities in a broad area of information technology for control and decision support systems, at three levels of education. At the first level (equivalent to B.Sc.) the degree programs, which combine courses from areas of control and computer science are offered. Two M.Sc. degree programs are offered, namely in Computer Science and in Control Systems. We are also proud to be able to offer interesting possibilities to our postgraduates for continuation of their study and research towards Ph.D.

Certainly, research is a very important part of our staff activities, directly affecting both Institute's recognition in Poland and abroad, and the quality of teaching. Description of research programs conducted by the staff of the Institute can be found in this report.

I express my sincere appreciation to faculty and staff of the Institute for their efforts and contributions to our achievements in teaching and research. In particular, I would like to congratulate Prof. Krzysztof Malinowski for successful completion of the EU founded project QOSIPS (Quality of Service and Pricing Differentiation for IP Services). I would also like to compliment Prof. Andrzej Pacut, who was awarded a prize of Ministry of National Education and Sport for his excellent habilitation (D.Sc. thesis). The book "Parallel and Distributed Computation"(in Polish), edited by Dr. E. Niewiadomska-Szynkiewicz and Dr. A. Karbowski was also awarded a prize of Ministry of National Education and Sport. I would also congratulated to Dr. P. Domański, who together with two other persons of Transition Technologies' S.A. has been awarded the first prize in VI-th edition of "Polish Product of the Future" organized by Polish Agency for Enterprise Development" for their project on "Digital optimization platform of energy production"

I would like to express my gratitude to all our partners, and in particular to our partners from abroad actively participating in international research programs. We will appreciate a feedback from our partners concerning our activities and this report itself. We will be glad to answer any and all questions and we will be pleased to send reprints of our papers and reports upon request.

Piotr Tatjewski

1 General Information

1.1 Board of Directors

Professor Piotr Tatjewski, Director
Professor Andrzej Pacut, Deputy Director for Research
Dr. Jerzy Paczyński, Deputy Director for Academic Affairs

1.2 Organization of the Institute

Faculty and staff: Status as of December 31, 2002 (unless marked otherwise)

Control and System Division

Division Head:	Professor Krzysztof Malinowski.
Professors:	Krzysztof Malinowski, Andrzej Pacut, Krzysztof Sacha, Piotr Tatjewski, Cezary Zieliński, Władysław Findeisen (retired), Anatol Gosiewski (retired), Radosław Ładziński (retired), Jacek Szymanowski (retired).
Assistant Professors:	Rafał Cegieła (since Feb. 2002), Paweł Domański (part time), Andrzej Karbowski, Włodzimierz Kasprzak, Tomasz J. Kruk, Ewa Niewiadomska-Szynkiewicz, Stefan Romicki, Wojciech Szynkiewicz, Adam Woźniak.
Senior Lecturers:	Jerzy Gustowski, Urszula Kręglewska, Zygmunt Komor, Andrzej Rydzewski.
Assistants:	Piotr Arabas (since Oct. 2002), Mariusz Kamola (since Oct. 2002), Piotr Marusak (since Oct. 2002), Andrzej Zalewski.
Lecturers:	Piotr Bolek.
Senior Engineers:	Piotr Misiurewicz, Jerzy Pułaczewski.
Engineers:	Krzysztof Kierzenkowski (until Oct. 2002).
Ph.D. Students:	Jacek Błaszczyk, Jarosław Chrobak, Adam Czajka, Przemysław Jaskóła, Radosław Kacperczyk, Mariusz Kamola, Adam Kozakiewicz, Bartłomiej Kubica, Rafał Lewczuk, Maciej Ławryńczuk, Andrzej Machnacz, Przemysław Magiera, Michał Andrzej Malarski, Marek Małowidzki, Wolde Mariam, Piotr Marusak, Fumio Adam Okazaki, Sebastian Plamowski, Andrzej Sikora, Marek Strzelczyk, Maciej Staniak, Adam Szmigielski, Marcin Szlenk, Paweł Wawrzyński, Tomasz Winiarski.

Research of the division is conducted in 4 research groups:

Control and Optimization of Complex Systems Group (**K. Malinowski**, A. Karbowski, E. Niewiadomska-Szynkiewicz, A. Pacut, M. Warchoł, A. Woźniak, P. Arabas, M. Kamola, B. Błaszczyk, J. Chrobak, A. Czajka, P. Jaskóła, M. Kamola, A. Kozakiewicz, B. Kubica, P. Magiera, M. Małowidzki, A. Sikora, A. Szmigielski, P. Wawrzyński)

The main area of interest is the theory and methodology of model-based predictive repetitive control and hierarchical control structures

for non-linear systems under uncertainty, methods for solving continuous and discrete time optimization problems, and software for computer aided analysis and design of complex systems. Particular attention is given to distributed and parallel, synchronous and asynchronous, computations as well as to analysis and design of control algorithms and pricing techniques for computer networks. Also, important work is concerned with development of techniques for biometric identification.

Process Control Group (*P. Tatjewski*, P. Domański, J. Gustowski, U. Kręglewska, Z. Komor, S. Romicki, P. Marusak, J. Pułaczewski, M. Ławryńczuk, P. Marusak, S. Plamowski, M. Strzelczyk)

Research of the group encompasses industrial process control. The focus is on predictive and fuzzy control algorithms, multilayer optimizing and supervisory control, and non-linear system control and analysis. Soft computing methods for design and tuning of control systems are developed, including those based on fuzzy systems, neural nets, and genetic algorithms. Theoretical considerations are combined with simulation analysis and investigations. Computer Control Systems Laboratory features laboratory-scale processes and is equipped with programmable controllers, industrial computers and workstations with software tools, including professional SCADA and soft control systems.

Robot Control and Programming Group (*C. Zieliński*, W. Kasprzak, A. Rydzewski, W. Szynkiewicz, A. Gosiewski, F. Okazaki, M. Staniak, T. Winiarski)

Research of the group is concerned with robot motion planning and control systems, autonomous mobile robot localization and navigation, robot programming languages, and computer vision systems. In the robot control systems area research is focused on new motion and force/position control algorithms for multi-robot systems. Special emphasis is given to the sensor-based motion planning and control of the single and multiple articulated or mobile robots. In the computer vision and signal processing (speech analysis) area the research is concentrated on autonomous navigation, transportation and security relevant environments.

Software Engineering Group (*K. Sacha*, R. Cegieła, T.J. Kruk, P. Bolek, K. Kierzenkowski, W. Macewicz, P. Misiurewicz, A. Zalewski, R. Kacperczyk, R. Lewczuk, M.A. Malarski, W. Mariam, M. Szlenk)

The group deals with software development technology, with the emphasis on software specification and design methods for real time applications and distributed operating systems. The research interests also comprise the cluster processing problems and the design of distributed internet-based applications. The examples of research projects include the application of Petri nets to the modeling and verification of software, the design of dependable distributed systems with resource redundancy and task migration, and electronic transfer of documents through the internet.

Operations Research and Management Systems Division

Division Head:	Professor Eugeniusz Toczyłowski.
Professors:	Eugeniusz Toczyłowski.
Assistant Professors:	Krzysztof Pieńkosz, Grzegorz Płoszajski, Cezary Szwed, Tomasz Traczyk.
Ph.D. Students:	Krzysztof Fleszar, Mariusz Kaleta, Mariusz Rogulski, Tomasz Śliwiński, Izabela Żółtowska.

Research of the division is concerned with operation research and structural discrete optimization methods for control and management of discrete processes, including applications in the deregulated electric power industry, computer integrated manufacturing and educational systems. The research is focused on market and auctions design, scheduling techniques, efficient structural-based optimization algorithms, time-table generation, strategic and tactical planning, detailed scheduling, and real-time operational control. Also, the object oriented and relational database management systems and CASE methods are applied to design of the distributed multi-functional heterogeneous information systems.

Optimization and Decision Support Division

Division Head:	Professor Wiesław Traczyk.
Professors:	Włodzimierz Ogryczak, Wiesław Traczyk, Andrzej P. Wierzbicki.
Assistant Professors:	Janusz Granat, Jerzy Paczyński, Andrzej Stachurski.
Senior Lecturers:	Tadeusz Rogowski (part time).
Lecturers:	Jerzy Sobczyk, Grzegorz Wójcik (since Oct. 2002).
Ph.D. Students:	Artur Białecki, Piotr Górczyński, Tomasz Kozak, Adam Krzemienowski, Sylwester Laskowski.

Research of the division is focused on the theory of distributed and parallel computational methods, and software for optimization. The theory covers a whole area of linear and non-linear, dynamic, stochastic and multiple criteria problems, and deals with such topics as the sensitivity aspects and the parametric aspects. Another area covers the decision theory, including the multi-person decisions and the game theory, and deals with software building for decision support and organization and management of computer networks. Also, research is carried on the methods of reasoning in knowledge based systems.

1.3 Statistical Data

FACULTY and STAFF	2000		2001		2002	
	persons	FTE	persons	FTE	persons	FTE
Academic Staff	34(+2)	30.62(+2)	32(+1)	29.23(+1)	38(+1)	34,03(+1)
by titles/degrees						
Professors	4(+1)	2.83(+1)	3(+1)	2.5(+1)	3	2,5(+1)
D.Sc.-s	5(+1)	5(+1)	7	7	7	7
Ph.D.-s	19	17.9	16	15.5	17	16.5
M.Sc.-s	6	4.9	6	4.23	12	8.03
by positions						
Professors	8(+2)	6.83(+2)	9(+1)	8.5(+1)	9	8.5 (+1)
Assistant Professors	18	16.9	15	14.5	17	16.5

FACULTY and STAFF	2000		2001		2002	
	persons	FTE	persons	FTE	persons	FTE
Senior Lecturers	4	3.5	4	3.5	5	4.5
Lecturers	2	1.4	3	1.73	3	1.33
Assistants	2	2	1	1	4	3.2
Ph.D. Students	32		30		32	
Technical Staff	12	9.3	12	9.05	10	7.30
Administrative Staff	6	5.75	6	5.65	6	5.4

FTE – Full Time Employment units,
+ – corrections due to persons on long-time leave of absence

ACTIVITIES	2000	2001	2002
Teaching activities			
standard teaching potential, hours	7261	6981	6695
# hours taught	16016	14316	15886
Degrees awarded			
D.Sc.	1	1	0
Ph.D.	5	2	3
M.Sc.	49	39	47
B.Sc.	26	32	25
Research projects			
granted by WUT	10	13	9
granted by State institutions	0	3	5
granted by international institutions	1	1	1
other	0	1	0
Referred publications			
monographs (authored or edited)	3	2	2
textbooks	0	1	0
chapters in books	13	20	10
papers in journals	10	20	25
international	*10*	*13*	*15*
local	*0*	*7*	*10*
papers in conference proceedings	42	38	41
international	*20*	*17*	*24*
local	*22*	*21*	*18*
other referred publications	9	7	8
Reports and unreferred publications	21	30	14
Conferences			
participated (# of conferences)	29	36	29
participated (# of part. from ICCE)	62	56	46

RESOURCES	2000	2001	2002
Space (sq.m.)			
laboratories	585	585	585
library + seminar room	74	74	74
faculty offices	724	724	724
Computers			
workstations*	20	21	23
personal computers*	222	231	244
Library resources			
books	4385	4459	4547
booklets	1276	1390	1442
journals subscribed	6	7	7

2 Faculty and staff

Presentation of our faculty starts with Professors Emeriti and continues with Senior Faculty, Supporting Faculty, Ph.D. Students, and Administrative Staff. Senior Faculty includes Professors, Associate Professors, Assistant Professors, and Senior Lecturers. By Supporting Faculty we understand Lecturers, Assistants, and Research Associates, as well as Technical Staff.

The following publication citation codes are used:

B books (Sec. 6.1)

Ch chapters in books (Sec. 6.1)

PH Philadelphia list journal articles (Sec. 6.2)

IJ other international journal articles (Sec. 6.2)

LJ local journal articles (Sec. 6.2)

IC international conference proceedings (Sec. 6.3)

LC local conference proceedings (Sec. 6.3)

A abstracts (Sec. 6.4)

U unreferred publications (Sec. 6.4)

R reports (Sec. 6.4)

In project participation lists, the reader is referred to the project listing in Sec. 3.

2.1 Professors Emeriti

Władysław Findeisen Professor, retired July 1999, Control and System Division.

M.Sc. 1949, Ph.D. 1954. Full Professor since 1962.

Founder and Director of ICCE (1955–1981), elected and re-elected Rector of WUT (1981–1985). Member of Polish Academy of Sciences (PAN) since 1971. Doctor Honoris Causa of The City University in London (1984), Warsaw University of Technology (1996), Gdańsk University of Technology (1997), Technische Universität Ilmenau (1998). Chairman of the Social Council to the Primate of Poland (1986–90), Vice-President of the Polish Academy of Sciences (PAN)(1990–1992), Senator of the Republic of Poland (1989–93), President of "Kasa Mianowskiego" (a foundation which sponsors foreign scientists in Poland) (since 1991), Vice-President of the Polish Committee for UNESCO (since 1999).

Interests:

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tel. 660 7397 and 825 0995
W.Findeisen@ia.pw.edu.pl

Anatol Gosiewski Professor, retired Oct. 2001, Control and System Division.

Ph.D. 1959, D.Sc. 1964 from WUT; the titles of Professor of Technical Sciences awarded in 1972 and 1992.

With WUT since 1951. Post-Doctoral Fellow at Case Institute of Technology, Cleveland, Ohio (1961), Visiting Prof. at the Dept. of Electrical Eng. of University of Minnesota, Minneapolis, Minnesota (1975), Visiting Prof. at the Dept. of Mechanical and Aerospace Eng., of University of Delaware, Newark, Delaware (1979). Member of the State Committee for the Scientific Title and Scientific Degrees (1993–1996), member of the Committee on Automation and Robotics of Polish Academy of Sciences (PAN). Member of Scientific Council of Institute of System Research (IBS PAN) (since 1985), and of the Industrial Institute for Automation and Measurements (PIAP) (since 1983). Chairman of the Section of Automation and Robotics T11A of the State Committee for Scientific Research (KBN) (1991–1996), Member of Scientific Society of Warsaw (TNW) (since 1983). Head of ICCE Robotics Group (1986–1996) and then Robotics and Operation Research Division, Director of the Ph.D. Program in Automatic Control and Computer Science at EIT.

Interests: Control theory, optimal control, robot dynamics and robot control.

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tel. 660 7750, 8255280
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Radosław Ładziński Professor, retired Jan. 1998, Control and System Division.

M.Sc. 1952, Ph.D. 1957 from WUT. The title of Professor of Technical Sciences awarded in 1968.

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tel. 660 7648
R.Ladzinski@ia.pw.edu.pl

Jacek Szymanowski Professor, retired Jan. 2000, Control and System Division.

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tel. 660 7922
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M.Sc. 1962, Ph.D. 1966, D.Sc. 1983 from WUT.

With WUT since 1968. Visiting Professor, Laboratoire d'Automatique de Nantes, Ecole Centrale de Nantes, France, 1992, 1994, 1995, 1996, 1997. Retired since January 1999.

Interests: Simulation of control systems, linear and nonlinear programming, control applications of optimization techniques, operating systems.

2.2 Senior Faculty

Rafał Cegieła Assistant Professor (since Feb. 2002), Control and System Division.

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M.Sc. 1996, Ph.D. 2001 from WUT.

With WUT since 2001.

Interests: Software engineering, formal methods, IT project management and system audit.

Paweł Domański Assistant Professor (part time), Control and System Division.

room 572a
tel. 660 7120
P.Domanski@ia.pw.edu.
pl

M.Sc. 1991, Ph.D. 1996 from WUT.

With WUT since 1991, half time since 1997.

Interests: Adaptive control, intelligent control, fuzzy logic.

Books, chapters: [Ch8].

Conference proceedings: [IC3, IC4, LC4, LC17].

Janusz Granat Assistant Professor, Optimization and Decision Support Division.

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tel. 6607640
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http://www.ia.pw.edu.
pl/~janusz

M.Sc. 1986, Ph.D. 1997 from WUT.

With WUT since 1987.

Interests: Decision support systems, multicriteria decision analysis, data warehouses, decision support in telecommunication industry.

Books, chapters: [Ch1].

Abstracts, reports: [A1].

Jerzy Gustowski Senior Lecturer, Control and System Division.

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tel. 660 7699
J.Gustowski@ia.pw.edu.
pl

M.Sc. 1979 from WUT.

With WUT since 1979.

Interests: Low level software for computer control, interfacing, single-chip microcomputers, PLC controllers.

Principal investigator in: [PR11].

Andrzej Karbowski Assistant Professor, Control and System Division.

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M.Sc. 1983, Ph.D. 1990 from WUT.

With WUT since 1983. Research visitor, Politecnico di Milano and Universita di Genova, 1992, Edinburgh Parallel Computing Centre, 2000. Member of IEEE.

Interests: Large scale systems, distributed computations, optimal control and management in risk conditions, decision support systems, neural networks, environmental systems management, control and decision problems in computer networks.

Conference proceedings: [IC1, IC6, IC7, IC10, LC1].

Abstracts, reports: [A2].

Project participation: [PR2].

Włodzimierz Kasprzak Assistant Professor, Control and System Division.

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pl
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M.Sc. 1981, Ph.D. 1987 from WUT, Dr-Ing. 1997 from Univ. of Erlangen-Nuremberg, D.Sc. 2001 from WUT.

With WUT since 1997. Member of Polish Section of IAPR.

Interests: Computer vision, speech recognition, neural networks, autonomous navigation.

Conference proceedings: [IC8, IC9].

Project participation: [PR9, PR13, PR15].

Urszula Kręglewska Senior Lecturer since Oct. 2002, Senior Engineer until Sept. 2002, Control and System Division.

M.Sc. 1973 from WUT.

With WUT in 1973–1993 and from 1994 to present, with Digital Equipment Poland 1993–1994.

Interests: Computer interfaces design.

Conference proceedings: [LC12].

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Zygmunt Komor Senior Lecturer, Control and System Division.

M.Sc. 1964, Ph.D. 1976 from WUT.

With WUT since 1964.

Interests: Automatic control, control instrumentation design and implementation.

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Tomasz J. Kruk Assistant Professor, Control and System Division.

M.Sc. 1994 from Technical University of Gdańsk. Ph.D. 1999 from WUT.

With WUT since 1999.

Interests: Operating systems, computer and network security, distributed systems.

Journal articles: [LJ5, LJ6, U1].

Conference proceedings: [LC8].

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Krzysztof Malinowski Professor, Division Head, Control and System Division.

M.Sc. 1971, Ph.D. 1974, D.Sc. 1978, the title of Professor of Technical Sciences awarded in 1989, appointed to ordinary professorship in 1994.

With WUT since 1971. Director of ICCE (1984–1996), Dean of the FEIT (1996–1999), Director of the Center for Control and Information-Decision Technology since Oct. 1999. Member of the Senate of the Warsaw University of Technology (since 1993), Chairman of the Senate Committee on Academic Staff (1993–1996 and 1999–2002), Chairman of Senate Committee on Research (1996–1999), Director of the University Priority Research Program in Control, Information Technology, and Automation (PATIA) (1994–1999). Correspondent Member of the Polish Academy of Sciences (PAN) (since 1998), Member of the Scientific Society of Warsaw (TNW), Member of Technical Sciences Group of the Ministry of National Education Expert Committee, Member of the Committee of Automation and Robotics of Polish Academy of Sciences (PAN), Vice-Chairman of the Scientific Council of Research and Academic Computer Network Institute (NASK), Member of the Scientific Council of the Industrial Institute for Automation and Measurements (PIAP), Member of the IFAC Technical Committees on Control and on Large Scale Systems.

Interests: Hierarchical control, model-based predictive control of nonlinear systems, applications of optimization, management and control of computer networks.

Books, chapters: [Ch4].

Journal articles: [PH4].

Conference proceedings: [IC1, IC5, IC10, IC13, IC14, LC1, LC10, LC20].

Abstracts, reports: [R8].

Principal investigator in: [PR1, PR7].

Project participation: [PR2].

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Ewa Niewiadomska-Szynkiewicz Assistant Professor, Control and System Division.

M.Sc. 1986, Ph.D. 1995 from WUT.

Research Assistant at the Institute of Geophysics of Polish Academy of Sciences in (1987–1988), with WUT since 1988, NASK since 2001, IEEE Member.

Interests: Large scale systems, hierarchical control, computer simulation, computer aided control systems design, environmental systems management, decision support systems, distributed computations, global optimization, telecommunication systems.

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Books, chapters: [Ch3].

Journal articles: [IJ1].

Conference proceedings: [IC15, IC16].

Abstracts, reports: [R8, R9, R10, R11, A3].

Principal investigator in: [PR1, PR2].

Włodzimierz Ogryczak Professor, Optimization and Decision Support Division.

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M.Sc. 1973, Ph.D. 1983 in Mathematics from Warsaw University, D.Sc. 1997 in Computer Science from PAN.

With Warsaw University, Institute of Informatics 1973–2000, with WUT since 2000. H.P. Kizer Eminent Scholar Chair in Computer Science at Marshall University, USA (1989-1992), visiting professor at Service de Mathématique de la Gestion of Université Libre de Bruxelles, Brussels, Belgium (1994-1995). Member of INFORMS, International Society of MCDM.

Interests: Computer solutions and interdisciplinary applications in the area of operations research, optimization and decision making with the main stress on: multiple criteria analysis and decision support, decision making under risk, linear, network and discrete programming, location and distribution problems.

Books, chapters: [Ch2, Ch6].

Journal articles: [PH5, PH6, PH7, PH8, IJ4, IJ5, LJ7, LJ8].

Abstracts, reports: [R2, A4, A5, A6, A7].

Principal investigator in: [PR3, PR7].

Andrzej Pacut Professor, Deputy Director of the Institute, Control and System Division.

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M.Sc. 1969, Ph.D. 1975, D.Sc. 2000 from WUT.

With Warsaw University of Technology since 1969, first with the Institute of Mathematics (until 1978) then with ICCE. Visiting Assistant Prof. at Lefschetz Center for Dynamical Systems of Brown University, Providence, RI (1980–1981), Visiting Associate Prof. at Oregon State University, Corvallis, OR (1984 and 1986–1991). Deputy Director of ICCE 1985–1986 and 1993 to present. Senior Member of IEEE, member of INNS (Int. Neural Networks Society). V-President of the Polish Section of IEEE (since 2001).

Interests: Learning systems, system identification, biometrics, neural modeling, neural networks.

Journal articles: [PH1, LJ1].

Conference proceedings: [IC2, IC17, IC22, LC2, LC3].

Principal investigator in: [PR7].

Project participation: [PR2].

Jerzy Paczyński Assistant Professor, Deputy Director of the Institute, Optimization and Decision Support Division.

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M.Sc. 1963 from WUT, M.Sc. in Mathematics 1973 from Warsaw University, Ph.D. 1974 from WUT.

With WUT since 1963. Deputy Director for Academic Affairs (since Sept. 1996).

Interests: Modeling, modeling languages, transformations of formal languages — tools and applications, application of computer algebra and logic programming to systems theory and optimization.

Krzysztof Pieńkosz Assistant Professor, Operations Research and Management Systems Division.

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tel. 660 7864
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M.Sc. 1984, Ph.D. 1992 from WUT.

With the Research Institute of Polish Gas and Oil Company 1984–1986, with WUT since 1986.

Interests: Operations research in particular discrete optimization, combinatorial algorithms, production planning and scheduling in manufacturing systems.

Journal articles: [LJ9].

Conference proceedings: [LC5, LC6].

Abstracts, reports: [R12, R13].

Grzegorz Płoszajski Assistant Professor, Operations Research and Management Systems Division.

M.Sc. 1968 from WUT, M.Sc. in Mathematics 1974 from Warsaw University, Ph.D. 1974 from WUT.

With WUT since 1969. Deputy Director for Information of the Main Library of WUT since 1996.

Interests: Control and simulation of discrete production systems, production management, quality management, library automation, text algorithms.

Conference proceedings: [LC11].

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Tadeusz Rogowski Senior Lecturer, Optimization and Decision Support Division.

M.Sc. 1972 from WUT.

With WUT since 1972, Director of University Computer Center (1989-2002).

Interests: Computer network, programming languages, operating systems.

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tel. 660 7922
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Stefan Romicki Assistant Professor, Control and System Division.

M.Sc. 1962, Ph.D. 1970 from WUT.

With WUT since 1962.

Interests: Automatic control, design of microprocessor devices, digital servomechanisms.

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tel. 660 7861
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Andrzej Rydzewski Senior Lecturer, Control and System Division.

M.Sc. 1974 from WUT.

With WUT since 1974.

Interests: Design of digital systems and microprocessor-based control and measurement systems.

Project participation: [PR9, PR15].

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Krzysztof Sacha Professor, group leader, Control and System Division.

M.Sc. (1973), Ph.D. (1976), D.Sc. (1996) from WUT.

With Minicomputer Research and Development Center ERA (1973), with WUT since 1976. Software Engineering Consultant for Industrial Automation Enterprize PNEFAL (1987–90), University of Groningen (1991–1992). Member of IEEE Computer Society and Section of Software Engineering of Polish Academy of Sciences (PAN).

Interests: Software engineering, real-time systems, software specification and design methods, distributed operating systems.

Conference proceedings: [LC12, LC13, LC14].

Principal investigator in: [PR7].

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Andrzej Stachurski Assistant Professor, Optimization and Decision Support Division.

M.Sc. 1976, Ph.D. 1980 from WUT.

Senior Assistant (1979–80) and then Assistant Professor (1980–92) at the Institute of System Research (IBS PAN), with WUT since 1992. Visiting Professor at the Calabria University, Italy, 1984, Äbo Swedish Academy in Turku, 1987, Jyväskylä University, Finland, 1988, JSPS invitee at the Department of Control Engineering, Osaka University, Japan, 1988–89. Member of Polish Society of Operations and Systems Research. Author and co-author of many scientific papers and reports on optimization algorithms, identification, applications of optimizations in macro-economy modeling and optimal design problems in structural engineering. Co-author of a textbook "Podstawy optymalizacji" ("Foundations of Optimization") published in 1999. Reviewer of Control&Cybernetics, Optimization, Archives of Control Science, SIAM J. on Optimization, IEEE Concurrency.

Interests: Interests: nonlinear programming, large-scale optimization, applications to the optimal design problems in structural engineering, parallel and distributed calculations in Mathematical Programming.

Journal articles: [IJ2, IJ3].

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Cezary Szwed Assistant Professor, Operations Research and Management Systems Division.

room 561
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M.Sc. 1993 from WUT. Ph.D. 1999 from WUT.

With WUT since 1999.

Interests: Operation research, timetabling, discrete optimization, combinatorial algorithms.

Books, chapters: [Ch7].

Project participation: [PR3].

Wojciech Szynkiewicz Assistant Professor, Control and System Division.

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edu.pl

M.Sc. 1985, Ph.D. 1996 from WUT.

With WUT since 1985. Deputy Director of the Research Center for Control and Information-Decision Technology (since November, 1999).

Interests: Multiple robots coordination, mobile robotics and artificial intelligence, robot motion space analysis and sensor based trajectory planning, real-time operating systems.

Conference proceedings: [IC9].

Principal investigator in: [PR7].

Project participation: [PR9, PR13, PR15].

Piotr Tatjewski Professor, Director of the Institute, group leader, Control and System Division.

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M.Sc. 1972, Ph.D. 1976, D.Sc. 1988 from WUT.

With Warsaw University of Technology since 1972. Ph.D. in automatic control in 1976, D.Sc. in 1988. Head of Process Control Group since 1991, Deputy Director of ICCE for Academic Affairs (1987–1991), Director of ICCE since 1996. Head of the Undergraduate Degree Program in Computer Control Systems (1994-1996). DAAD scholarship in 1978 (TU Hanover), SERC research fellow at the City University, London (1986), visiting professor at the University of Birmingham (1992/1993). Member of the FEIT Board for Graduate Studies, Member of the FEIT Committee on the Faculty Structure and Organization. Member of the IFAC Education Committee.

Interests: Multi-layer control systems, process control and optimization, predictive control, decomposition methods in optimization and control, soft computing methods.

Books, chapters: [B1].

Conference proceedings: [IC12, IC20, LC9, LC18].

Principal investigator in: [PR7, PR8, PR10, PR12, PR14].

Eugeniusz Toczyłowski Professor, Division Head, Operations Research and Management Systems Division.

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M.Sc. 1973, Ph.D. 1976, D.Sc. 1989 from WUT.

With WUT since 1973. Head of Operations Research and Management Systems Division, Vice-Dean of the Faculty of Electronics at WUT (1990–1993), chairman of the Rector's Committee for University Computerization (1993–1999), Advisor to the Dean on Strategic Planning (1993–1996). Head of the Undergraduate Program in Information Systems for Decision Support, Member of the Section on Decision Support of the Committee of Automation and Robotics of Polish Academy of Sciences(since 1992), Member of the Scientific Council of the Systems Research Institute (IBS PAN) (since 2002).

Interests: Structural approaches to discrete optimization, operations research and management, management information systems, auction theory, market design.

Books, chapters: [B2, Ch2].

Journal articles: [LJ4].

Conference proceedings: [LC5, LC6].

Abstracts, reports: [R12, R13, R14].

Principal investigator in: [PR7].

Tomasz Traczyk Assistant Professor, Operations Research and Management Systems Division.

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M.Sc. 1984, Ph.D. 1992 from WUT.

With WUT since 1984.

Interests: Database management systems (DBMS), applications of DBMS in management and control, fourth generation languages, CASE methods, information systems, Web-based and distributed systems, XML language and its applications.

Journal articles: [U3].

Conference proceedings: [LC19, U2].

Wiesław Traczyk Professor, Division Head, Optimization and Decision Support Division.

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M.Sc. 1959, Ph.D. 1964, D.Sc. 1969 from WUT, the title of Professor awarded 1983.

With WUT since 1957, Vice-Dean of the Faculty of Electronics (1971–1975), Deputy Director (1975–1981) and Director of ICCE (1981–1984). Member of the Senate of Warsaw University of Technology (1981-1984), Chairman of the Senate Committee of Finances (1981-84). Professor of the University in Port Harcourt, Nigeria (1984-1987), Professor of the Institute of Telecommunications since 1997. Chairman of FEIT Committee for Ph.D. Degrees in Automatic Control and Computer Sciences. Head of ICCE Optimization and Decision Support Division (1997-2002).

Interests: Knowledge engineering, expert systems, artificial intelligence.

Principal investigator in: [PR7].

Michał Warchoł Assistant Professor since March 2002, Control and System Division.

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M.Sc. 1991, Ph.D. 2002 from WUT.

With WUT since 1991.

Interests: Predictive control, synthesis of control systems, symbolic calculations, operating systems.

Conference proceedings: [IC21, LC20].

Abstracts, reports: [A8].

Project participation: [PR2].

Andrzej P. Wierzbicki Professor, Optimization and Decision Support Division.

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M.Sc. 1960, Ph.D. 1964, D.Sc. 1968 from WUT, titles of Professor of Optimization and Decision Theory awarded in 1975 and 1992.

With WUT since 1961, half time since March 1997. Deputy Director of the ICCE (1971–1975), Deputy Dean (1971-1972) and then Dean of FEIT(1975–1978) member of the Senate (1975–1978), member or chairman of many university commissions. Since 1978 working with the International Institute for Applied Systems Analysis (IIASA) in Laxenburg, Austria and served (1979–1984) as the chairman of the Systems and Decision Sciences Program. Visiting prof. at the University of Minnesota, Minneapolis, MN, Brown University, Providence, RI (1970–1971), and Kyoto University, Japan (1989–1990). Director of the National Institute of Telecommunications in Poland since 1996. Chairman of the Commission of Applied Research of the State Committee for Scientific Research (KBN)(1991–1994) Chairman of the Consulting Panel for Promotion and Policy of Science of State Committee for Scientific Research (KBN) (1994–2000), Member of the Consulting Panel for Computer Infrastructure of Science KBN (1994–2000). Chairman of the Scientific Council of the Industrial Institute for Automation and Measurements (PIAP) (since 1991), Scientific and Academic Computer Network (since 1994), and member of the Scientific Council of Institute of System Research (IBS PAN) (since 1992). Member of the Committee of Automation and Robotics of Polish Academy of Sciences (PAN) (since 1970), vice Chairman since 2002, Chairman of its Section on Decision Support Systems (since 1992). Member of the presidium of the Committee for Future Studies

"Poland XX+" PAN (since 1996), Member of the Panel for Cooperation with IIASA of PAN. Member of the presidium of the Polish Association for the Club of Rome (1995-2002). Member of Polish Mathematical Society (PTM) (since 1975) and of Society of Polish Electrical Engineers (SEP) (since 1970). Member of the Information Society Technology Advisory Group (ISTAG) of the European Commission (2000-2002). Recipient of George Cantor Award of the Int. Soc. of Multi-Criteria Decision Making for his results in multi-criteria optimization theory and decision support methodology (1992).

Interests: Optimization theory and algorithms, decision theory, decision support systems, negotiation methods and experiences, applications in telecommunication, information society issues.

Adam Woźniak Assistant Professor, Control and System Division.

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M.Sc. 1970, Ph.D. 1975 from WUT.

With WUT since 1970. Advisor to the Dean of Faculty for Departmental Libraries (1987–1993 and 1999–2002), Member of WUT Library Council (since 1999), Member of WUT Committee for Student Admissions (2001-2002).

Interests: Control of complex systems, servomechanisms, robot control, multi-criteria optimization, game theory, decision support systems.

Project participation: [PR2, PR13, PR15].

Cezary Zieliński Professor, group leader, Control and System Division.

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M.Sc. 1982, Ph.D. 1988, D.Sc. 1996 from WUT.

With WUT since 1985. Research visitor at Loughborough University of Technology, UK (1990, 1992), Senior Fellow at Nanyang Technological University, Singapore (1999-2001), Secretary of Priority Research Program in Control, Information Technology, and Automation (PATIA) (1994-1999). Member of the Editorial Board of International Journal of Intelligent Mechatronics: Design and Production, Program Committee Member of PAK (Pomiary, Automatyka, Kontrola). Head of the Auditing Team of the Technological University Acreditation Committee, Head of ICCE Robotics Group since 1996.

Interests: Robot programming methods, open-structure robot controllers, behavioral control, digital and microprocessor systems.

Books, chapters: [Ch9, Ch10].

Journal articles: [LJ10, LJ11].

Conference proceedings: [IC23, IC24].

Principal investigator in: [PR7, PR9, PR13, PR15].

2.3 Supporting Faculty and Staff

Piotr Arabas Assistant (since Oct. 2002), Control and System Division.

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M.Sc 1996 from WUT.

With WUT since 2002.

Interests: Hierarchical systems, predictive control, management of telecommunication services.

Project participation: [PR1, PR2].

Piotr Bolek Lecturer, Control and System Division.

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M.Sc. 1991 from WUT.

With WUT since 1991.

Interests: Operating systems, UNIX, symbolic calculations, computer networks, parallel and distributed computing, game theory, text processing, electronic publications, TeX, perl, SGML, HTML, PDF, databases.

Mariusz Kamola Assistant (since Oct. 2002), Control and System Division.

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M.Sc. 1997 from WUT.

With WUT since 2002.

Interests: Modeling and simulation, optimization, parallel computation, IP networks.

Books, chapters: [Ch5].

Project participation: [PR1, PR2].

Krzysztof Kierzenkowski Engineer (until Oct. 2002), Control and System Division.

M.Sc. 1992 from WUT.

With WUT since 1993 until Oct. 2002.

Interests: Parallel and distributed computation, robot control systems, machine vision, image processing.

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Włodzimierz Macewicz Senior Software Engineer, Control and System Division.

M.Sc. 1983 from WUT.

With WUT since 1983.

Interests: Computer networks, data bases, operating systems, programming languages, text processing.

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Piotr Marusak Assistant (since Oct. 2002), Control and System Division.

M.Sc. 1997 from WUT.

With WUT since 2002.

Interests: Predictive control of nonlinear systems, digital control algorithms, process modeling and simulation.

Conference proceedings: [LC9, LC18].

Principal investigator in: [PR5].

Project participation: [PR8, PR10, PR12, PR14].

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Piotr Misiurewicz Senior Engineer, Control and System Division.

M.Sc. 1961, Ph.D. 1969 from WUT.

With WUT since 1965. Deputy Director of ICCE (1984–1993).

Interests: Design of digital systems and microprocessor-based control and measurement systems.

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Jerzy Pułaczewski Senior Engineer, Retired Associate Professor, Control and System Division.

M.Sc. 1958, Ph.D. 1965 from WUT.

With WUT since 1956, Deputy Director of ICCE (1972–80 and 1993–96), Deputy Dean of the Faculty of Electronics (1981–87), Chairman of the Departmental Curriculum Committee (1981–90), member of the Senate of Warsaw University of Technology (1987–90). Scholarship in Moscow Electroenergy University (1958–59), the British Council scholarship at Cambridge University, UK (1965–66), visiting researcher at Minneapolis University, Minneapolis, MN (1980–81).

Interests: Digital control algorithms, process modeling and simulation, process control.

Project participation: [PR12].

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Jerzy Sobczyk Lecturer, Optimization and Decision Support Division.

M.Sc. 1985 from WUT.

With WUT since 1984. FEIT Network Administrator.

Interests: Computer networks, programming languages, parallel and distributed programming, multi-criteria optimization.

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Grzegorz Wójcik Lecturer, Engineer until Sept. 2002, Optimization and Decision Support Division.

M.Sc. 1994 from WUT.

With WUT since 1994, half time since Feb. 1998.

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http://www.ia.pw.edu.pl/~grzesio

Andrzej Zalewski Assistant since May 2002, Control and System Division.

M.Sc. 1997 from WUT.

With WUT since 2002.

Interests: Software engineering, real-time systems, timing requirements, concurrent systems, performance analysis for computer systems, IT project economics.

Principal investigator in: [PR4].

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2.4 Ph.D. Students

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Artur Białecki   Ph.D. Student, Optimization and Decision Support Division. Supervisor: Wiesław Traczyk

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Jacek Błaszczyk   Ph.D. Student, Control and System Division (Control and Optimization of Complex Systems Group). Supervisor: Krzysztof Malinowski
Conference proceedings: [IC1, LC1].

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Jarosław Chrobak   Ph.D. Student, Control and System Division (Control and Optimization of Complex Systems Group). Supervisor: Andrzej Pacut
Conference proceedings: [LC2].
Project participation: [PR2].

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Adam Czajka   Ph.D. Student, Control and System Division (Control and Optimization of Complex Systems Group). Supervisor: Andrzej Pacut
Journal articles: [LJ1].
Conference proceedings: [IC2, LC3].
Project participation: [PR1].

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Krzysztof Fleszar   Ph.D. Student, Operations Research and Management Systems Division. Supervisor: Eugeniusz Toczyłowski
Journal articles: [PH3, PH9, LJ3].
Conference proceedings: [LC5, LC6].
Abstracts, reports: [R12, R13].

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Piotr Górczyński   Ph.D. Student, Optimization and Decision Support Division. Supervisor: Andrzej Wierzbicki

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Przemysław Jaskóła   Ph.D. Student, Control and System Division (Control and Optimization of Complex Systems Group). Supervisor: Krzysztof Malinowski
Conference proceedings: [IC5].
Project participation: [PR1].

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Radosław Kacperczyk   Ph.D. Student, Control and System Division (Software Engineering Group). Supervisor: Krzysztof Sacha

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Mariusz Kaleta   Ph.D. Student, Operations Research and Management Systems Division. Supervisor: Eugeniusz Toczyłowski
Books, chapters: [Ch2].
Journal articles: [LJ4].
Conference proceedings: [LC5, LC6, LC7].
Abstracts, reports: [R12, R13].

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Mariusz Kamola   Ph.D. Student (until Oct. 2002), Control and System Division (Control and Optimization of Complex Systems Group). Supervisor: Krzysztof Malinowski
For publications and project participation see faculty listings

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Tomasz Kozak   Ph.D. Student, Optimization and Decision Support Division. Supervisor: Włodzimierz Ogryczak

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Adam Kozakiewicz   Ph.D. Student, Control and System Division (Control and Optimization of Complex Systems Group). Supervisor: Krzysztof Malinowski
Conference proceedings: [IC10].

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Adam Krzemienowski   Ph.D. Student, Optimization and Decision Support Division. Supervisor: Włodzimierz Ogryczak
Journal articles: [LJ7].
Abstracts, reports: [R3].
Project participation: [PR3].

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Bartłomiej Kubica   Ph.D. Student, Control and System Division (Control and Optimization of Complex Systems Group). Supervisor: Krzysztof Malinowski
Books, chapters: [Ch3].
Conference proceedings: [IC11].

Sylwester Laskowski Ph.D. Student, Optimization and Decision Support Division. Supervisor: Andrzej Wierzbicki

Abstracts, reports: [R4, R5, R6, R7].

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Rafał Lewczuk Ph.D. Student, Control and System Division (Software Engineering Group). Supervisor: Krzysztof Sacha

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Maciej Ławryńczuk Ph.D. Student, Control and System Division (Process Control Group). Supervisor: Piotr Tatjewski

Conference proceedings: [IC12, LC9, LC18].

Principal investigator in: [PR6].

Project participation: [PR8, PR10, PR12, PR14].

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Andrzej Machnacz Ph.D. Student, Control and System Division. Supervisor: Jacek Szymanowski

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Przemysław Magiera Ph.D. Student, Control and System Division (Control and Optimization of Complex Systems Group). Supervisor: Krzysztof Malinowski

Conference proceedings: [IC13].

Project participation: [PR2].

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Michał Andrzej Malarski Ph.D. Student, Control and System Division (Software Engineering Group). Supervisor: Krzysztof Sacha

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Marek Małowidzki Ph.D. Student, Control and System Division (Control and Optimization of Complex Systems Group). Supervisor: Krzysztof Malinowski

Conference proceedings: [IC14].

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Wolde Mariam Ph.D. Student, Control and System Division (Software Engineering Group). Supervisor: Krzysztof Sacha

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Piotr Marusak Ph.D. Student (until Oct. 2002), Control and System Division (Process Control Group). Supervisor: Piotr Tatjewski

For publications and project participation see faculty listings

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Fumio Adam Okazaki Ph.D. Student, Control and System Division (Robot Control and Programming Group). Supervisor: Włodzimierz Kasprzak

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Sebastian Plamowski Ph.D. Student, Control and System Division (Process Control Group). Supervisor: Piotr Tatjewski

Project participation: [PR8].

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Mariusz Rogulski Ph.D. Student, Operations Research and Management Systems Division. Supervisor: Eugeniusz Toczyłowski

Books, chapters: [Ch7].

Conference proceedings: [LC5, LC6].

Abstracts, reports: [R12, R13].

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Andrzej Sikora Ph.D. Student, Control and System Division (Control and Optimization of Complex Systems Group). Supervisor: Krzysztof Malinowski

Conference proceedings: [IC16].

Abstracts, reports: [R10].

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Marek Strzelczyk Ph.D. Student, Control and System Division (Process Control Group). Supervisor: Piotr Tatjewski

Books, chapters: [Ch8].

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Maciej Staniak Ph.D. Student, Control and System Division (Robot Control and Programming Group). Supervisor: Cezary Zieliński

Project participation: [PR15].

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Adam Szmigielski Ph.D. Student, Control and System Division (Control and Optimization of Complex Systems Group). Supervisor: Krzysztof Malinowski and Lech Polkowski (Advisor)

Conference proceedings: [IC19, LC16].

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Marcin Szlenk Ph.D. Student, Control and System Division (Software Engineering Group). Supervisor: Krzysztof Sacha

Conference proceedings: [IC18, LC15].

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Tomasz Śliwiński Ph.D. Student, Operations Research and Management Systems Division. Supervisor: Eugeniusz Toczyłowski

Journal articles: [IJ5].

Abstracts, reports: [A7].

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Paweł Wawrzyński Ph.D. Student, Control and System Division (Control and Optimization of Complex Systems Group). Supervisor: Andrzej Pacut

Conference proceedings: [IC22].

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Tomasz Winiarski Ph.D. Student, Control and System Division (Robot Control and Programming Group). Supervisor: Cezary Zieliński

Project participation: [PR15].

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Izabela Żółtowska Ph.D. Student, Operations Research and Management Systems Division. Supervisor: Eugeniusz Toczyłowski

Books, chapters: [Ch2].

Abstracts, reports: [R14].

2.5   Administrative staff

Jolanta Cieślewicz	Librarian and office support (part time)
Elżbieta Głowacka	Secretary, Student affairs.
Maria Graszka	Office support.
Małgorzata Jaworska	Finances support(half time). M.Sc. 2001 from Łódź University.
Elżbieta Matyjasiak	Secretary, Main office. M.Sc. 2002 from Warsaw School of Management and Marketing.
Bohdan Murzynowski	Technical support (part time). B.Sc. from WUT.
Jolanta Niedbało	Office support (half-time).
Jadwiga Osowska	Manager, Finances. M.Sc. 1975 from WUT.
Ryszard Tchórz	Technical support.
Daniel Wieczorek	Technical support (half-time).
Andrzej Wiśniewski	Technical support.
Beata Woźniak	Manager, Administration. M.Sc. 1993 from Warsaw University.

3   Teaching Activities — Academic Year 2001/2002

Course Title	Course code	Hours per week	Semester	Lecturer
Administration of UNIX and TCP/IP	ASU	2 - 2 -	6 SIWD	J. Sobczyk
Data Bases and Information Systems	BSSI	2 - 2 -	5 SIWD	T. Traczyk
Computer Networks	ECONE	2 - 2 -	7 En	J. Sobczyk (summer)
Control	ECONT	2 - 2 -	6 En	R. Ładziński (summer)
Digital Control Algorithms	CAR	2 - - 1	OT	J. Pułaczewski (winter)
Dynamic Systems	EDYSY	2 - 2 -	5 En	R. Ładziński (winter)
Elements of Robotics	ERO	2 - 2 -	7 KSS	W. Szynkiewicz
Discrete Process Scheduling	HPD	2 - 2 -	6 SIWD	E. Toczyłowski
Knowledge Engineering	IW	2 - - 1	7 SIWD	W. Traczyk
Commercial Data Bases 2	KBD2	2 - - 2	OT	T. Traczyk (summer)
Numerical Methods and Simulation	MNSK	2 - 2 -	5 KSS, 5 SIWD	P. Tatjewski
Evolutionary strategies	MSR	2 - 2 -	OT	P. Domański (summer)
Artificial Intelligence Methods	MSI	2 - - 1	PZ-P	W. Traczyk (summer)
Numerical Methods	ENUME	2 - 2 -	4 En	P. Tatjewski (summer)
Optimization and Decision Support	OWD	2 - - 1	PZ-A, PZ-I	A. Wierzbicki (summer)
Optimization in Operation Research	OBO	2 - - 1	PZ-A, PZ-I	E. Toczyłowski (winter)
Fundamentals of Operation Research	POBO	2 - 1 -	4 I	K. Pieńkosz (summer), G. Płoszajski (winter)
Fundamentals of Parallel and Distributed Computation	PORR	2 - - 2	PZ-A, PZ-I	A. Karbowski
Fundamentals of Optimization	POPTY	2 - 2 -	5 SIWD	A. Stachurski
Controls Fundamentals	PRE	2 - 1 -	OT	A. Woźniak
Fundamentals of Control Systems	PSS	2 1 1 -	4 I	P. Tatjewski (summer), K. Malinowski (winter)
Programming 1	EPRO1	2 1 1 -	1 En	J. Paczyński (winter)
Programming 2	EPRO2	2 - 2 -	1 En	A. Stachurski (summer)
Digital Circuits	EDC1	2 - 2 -	En, OT	C. Zieliński (summer)
Object Oriented Programming	PROO	2 - 2 -	3 P2	W. Kasprzak (summer)
C Programming	PROC	2 - 2 -	2 P2	A. Stachurski (winter)
Control Design	PURE	2 - - 2	5 KSS	A. Woźniak
Distributed Operating Systems	RSO	2 - 1 -	PZ-I, OT	T.J. Kruk (summer)
Digital Servomechanisms	SCYF	2 - - 1	OT	S. Romicki (winter)
Computer Networks	SKP2	2 - 1 -	5 KSS, 5 SIWD	J. Sobczyk (winter), T. Rogowski (summer)
Neural Networks	SNUP	2 - - 1	OT	A. Pacut (summer)
Software Specification and Design	SPOP	2 - 1 -	7 SIWD	K. Sacha
Programmable Controllers	SP	2 - 2 -	6 KSS	J. Gustowski
System Simulation and Control	SSS	2 - - 1	PZ-A, PZ-I	K. Malinowski (summer)
Real-time Systems	SCZR	2 - 2 -	6 KSS	K. Sacha
Operating Systems	SOP2A	2 - 2 -	5 KSS, 5 SIWD	T.J. Kruk

Course Title	Course code	Hours per week	Semester	Lecturer
Process Automatization Techniques	TAP	2 - 1 -	PZ-A, OT	P. Tatjewski (winter)
Microprocessor Techniques	TM	2 1 2 -	5 KSS	A. Rydzewski
Theory of Optimization	TOP	2 - - 1	PZ-P, OT	W. Ogryczak (winter)
Control Theory	TST	2 1 - 1	PZ-P, OT	A. Woźniak (summer)
Logic Circuits	UKLO	2 - 2 -	3 P1	C. Zieliński
Decision Support in Situation of Risk	WDWR	2 - - 1	PZ-I, OT	W. Ogryczak (summer)
Decision Support and Design	WDIP	2 - 2 -	6 SIWD	J. Granat
Synthesis of Decision Rules	ZSRD	2 - 2 -	6 SIWD	K. Malinowski
Information Project Management	ZPI	2 - - 1	8 SIWD	K. Pieńkosz
Robot Control and Programming	SPRR	2 - - 1	PZ-A, OT	W. Szynkiewicz (summer)
Image and Speech Recognition	EIASR	2 1 - 1	En	W. Kasprzak (winter)
Image and Speech Recognition	ROSM	2 - - 1	PZ-P	W. Kasprzak (winter)
Parallel Numerical Methods	EPNM	2 2 - -	7 En, OT	A. Stachurski (winter)
Programming fundamentals	PRI	2 1 2 -	1 I	J. Paczyński (summer)

Table explanations

Hours per week: The digits in a four-digit code denote number of hours per week of, consecutively, lectures, recitation classes, laboratory hours and project hours, resp. (for instance, [2 -1 1] corresponds to two hours of lectures, no classes, one hour of laboratory and one hour of project per week).

Programs:

symbol	level	description
P1,P2	B.Sc.	pre-specialization courses
SIWD	B.Sc.	specialization in Information Systems for Decision Support
KSS	B.Sc.	specialization in Computerized Control Systems
En	B.Sc.	taught in English
I	M.Sc.	Informatics
PZ-P	M. Sc., Ph.D.	Advanced classes, fundamental
PZ-A	M. Sc., Ph.D.	Advanced classes, controls
PZ-I	M. Sc., Ph.D.	Advanced classes, informatics
OT	all levels	free electives

4 Projects

[PR1] The IST Programme IST-1999-2002: **QOSIPS Quality of service and pricing differentiation for IP services**, granting period 01.09.2000 – 30.06.2002. Coordination: University of Manchester, Institute of Science and Technology (UMIST), UK. Contractor: ICCE, Knowledge Support Systems Ltd. (KSS) (Manchester, UK), Ipanema Technologies (Paris, France), 9 Telecom Reseau (Paris, France). Project managers: Krzysztof Malinowski, Ewa Niewiadomska-Szynkiewicz. Investigators: Piotr Arabas, Adam Czajka, Przemysław Jaskóła, Mariusz Kamola.

The objective of the project was to develop innovative technologies for supporting Quality of Service (QoS) management, service differentiation and price setting of Internet Protocol Network Service Providers. The consortium designed, implemented, tested and evaluated an integrated system (software, hardware and methodology) that performs the following functions:

1. Providing an exhaustive, non-intrusive and accurate measurement of real-time QoS of user's traffic packets without injection of test packets in the network.

2. Support customer's profiling (through classification of customer "real" traffic and use of QoS oriented services) as an innovative way of generating service differentiation.

3. Support the pricing of QoS oriented services such as QoS oriented Service Level Agreement, per application or/and per destination prioritization, pay-per-use, pay-per-class of service, or global prices packaged per customer type, etc.

The results achieved were fully consistent with the planned goals. The QOSIPS system as a whole promises to become a powerful commercial tool, and first evidence of the business case has been confirmed by the user. The project has completed very successfully. The original project objectives were totally fulfilled.

[PR2] KBN grant 7 T11A 022 20: **Specialized optimization and simulation methods for decision making in complex systems control**, granting period 01.03.2001 – 28.02.2003. Coordination: ICCE. Principal investigator: Ewa Niewiadomska-Szynkiewicz. Investigators: Piotr Arabas, Jarosław Chrobak, Mariusz Kamola, Andrzej Karbowski, Przemysław Magiera, Krzysztof Malinowski, Andrzej Pacut, Michał Warchoł, Adam Woźniak, Maciej Żmuda.

The basic goal of the project is to develop, implement and test optimization methods, control structures and algorithms for complex systems. The focus is to apply the proposed optimization techniques and control methods (global and parallel optimization, hierarchical optimization, predictive control algorithms, hierarchical control structures, reinforcement networks) to selected real-life problems. The case studies include: air defense, optimal portfolio selection, control of oil department in petrochemical works, flood control in multi-reservoir systems. The effectiveness of proposed control systems will be tested through computer simulation.

[PR3] KBN grant PBZ 016/P03/99: **Mathematical methods for analysis of the financial markets and instruments in Poland**, granting period 01.06.2001–31.12.2003. Coordinator: Institute of Mathematics of the Polish Academy of Sciences (IMPAN). Principal investigator: Włodzimierz Ogryczak, investigators: Cezary Szwed, Adam Krzemienowski.

The goal of the research is to develop mathematical theory and techniques concerned with quantitative analysis and decision support at the strategic, tactical and operational level of risk management in financial markets in Poland. Techniques for risk measurement and portfolio optimization represent the main focus of the research within ICCE. New LP computable risk measures and the corresponding LP solvable portfolio optimization models have been introduced and analyzed.

[PR4] KBN grant 7 T11C 02621: **Transformational specification and design of hard real-time embedded software**, granting period 11.10.2001 – 30.09.2002. Coordination: Krzysztof Sacha. Principal investigator: Andrzej Zalewski.

The project concentrates on formal methods of analysis and design of real-time systems with hard timing constraints. The work is aimed at the development of a formal model based on extended Petri nets (called Transnet) to include both functional and hard timing requirements. The developed method assumes formal transformation of systems specification to the model of its design. An important aspect of this project are analysis techniques of timing properties of a modeled system, especially verification of timing constraints fulfilment with real-time analysis techniques called Rate Monotonic Analysis (RMA). A formal method of specification and design of hard real-time system with a wide range of timing analysis techniques is expected to be developed.

[PR5] KBN grant 4 T11A 007 22 **Predictive control of nonlinear plants based on dynamic matrix technique**, granting period 1.03.2002 – 31.12.2002. Coordination: Piotr Tatjewski. Principal investigator: Piotr Marusak.

The aim of the project is to investigate computationally efficient Fuzzy MPC algorithms for constrained nonlinear problems. The algorithms are based on dynamic matrix technique (DMC) and fuzzy Takagi-Sugeno approach. Various formulations of the algorithms are considered. Influence of model uncertainty is investigated. The analysis is focused also on stability.

[PR6] KBN grant 4 T11A 008 22 **Multiregional neural models, nonlinear predictive control algorithms based on neural models**, granting period 1.03.2002 – 31.03.2003. Coordination: Piotr Tatjewski. Principal investigator: Maciej Ławryńczuk.

The objective of the project is to develop nonlinear model predictive control algorithms (MPC) based on feed forward neural networks. Two general classes are researched: MPC structures with nonlinear optimization and suboptimal ones, based on different linearization approaches. The latter class is thoroughly investigated because of its computational efficiency. The structure and identification algorithms for multi-regional neural models is also investigated.

[PR7] Statutory grant 504G/036/9: **Development of methodology of control, decision support and production management**, granting period 01.5.2001 – 15.4.2002 and 16.4.2002 – 15.04.2003. Coordination: ICCE. Principal investigators: Andrzej Pacut, Krzysztof Malinowski, Włodzimierz Ogryczak, Krzysztof Sacha, Wojciech Szynkiewicz, Piotr Tatjewski, Eugeniusz Toczyłowski, Wiesław Traczyk, Cezary Zieliński.

[PR8] Dean's grant 503/0002/001: **Algorithms for advanced control and optimization of industrial processes**, granting period 14.08.2001 – 31.05.2002. Coordination: ICCE. Principal investigator: Piotr Tatjewski. Investigators: Piotr Marusak, Maciej Ławryńczuk, Sebastian Plamowski.

The project was aimed into further development of advanced control and optimization algorithms. New results concerning design and stability analysis of nonlinear model-based predictive control algorithms were obtained, including new control algorithms with guaranteed nominal stability and new results on stability of discrete quasi-infinite horizon predictive algorithms. A concept of multi-regional neural models was developed and applied to predictive control. Integrated system optimization and parameter estimation was applied to objects with varying external inputs. A monograph on "Advanced Control of Industrial Processes - Structures and Algorithms" was written by the principal investigator (published by Academic Publishers EXIT 2002).

[PR9] Dean's grant 503G/1031/0003/002: **Multiagent robotic systems: control, trajectory planning and environment image analysis**, granting period: 20.09.2002 – 30.09.2003. Principal investigator: Cezary Zieliński, investigators: Wojciech Szynkiewicz, Włodzimierz Kasprzak, Andrzej Rydzewski.

The investigations concentrate on theoretical aspects of programming and controlling systems consisting of many embodied autonomous agents acting in partially structured environments. Such systems will perform diverse service, inspection or intervention tasks within or outside buildings.

[PR10] Dean's grant 503G/1031/0004/002: **Nonlinear predictive control algorithms using successive linearisations**, granting period: 20.09.2002 – 31.05.2003. Principal investigator: Piotr Tatjewski, investigators: Maciej Ławryńczuk, Piotr Marusak.

The aim of the project is to continue research on nonlinear predictive control algorithms supporting completion of two far advanced PhD thesis. In particular, FDMC (Fuzzy Dynamic Matrix Control) algorithms basing on on-line successive linearization (and thus efficient for practical applications) are investigated. Further, application of the approach to predictive control algorithms using neural process models is under research. The design and analysis are focused on practical applicability and stability issues. The software package REGZA for design and analysis of advanced control algorithms will be also under further development

[PR11] Dean's grant 503G/1031/0005/002: **Analytical and soft-computing methods for nonlinear objects control**, granting period: 20.09.2002 – 31.05.2003. Principal investigator: Jerzy Gustowski.

The author's goal is a trial to propose some methods for controlling of nonlinear objects. These methods should combine advantages of two types of control algorithms: analytical and soft computing ones. The methods are especially designed for electromechanical objects and could be verified using the laboratory rig of an inverted pendulum driven by DC motor of a linear movement.

[PR12] CATID grant **Computerized process control systems**, granting period: 01.10.2001 – 31.05.2002. Principal investigators: Piotr Tatjewski, J. Kościelny. Investigators from ICCE: Jerzy Pułaczewski, Piotr Marusak, Maciej Ławryńczuk.

The aim of the (small) project was to further support the inter-faculty seminar, in particular to support research and participation of Ph.D. Students.

[PR13] CATID grant **Design of Complex Robotic Systems**, granting period: 01.10.2001 – 31.05.2002. Principal investigator: Cezary Zieliński. Investigators: Włodzimierz Kasprzak, Wojciech Szynkiewicz, Adam Woźniak.

The following research areas were at the focus of interest: robot programming frameworks, self-localization of mobile robots, control of walking machines, control of a milling robot, identification of friction in robot drives, design of parallel manipulators, robotized identification of welding seams, blind signal source separation.

[PR14] CATID grant **Methods of modelling, control and faultdetection of industrial processes**, granting period: 20.03.2003–31.08.2003. Principal investigators: Piotr Tatjewski, J. Kościelny. Investigators from ICCE: Piotr Marusak, Maciej Ławryńczuk.

The research of ICCE concerns nonlinear constrained predictive control algorithms, in particular practically effective algorithms with on-line nonlinear model linearizations and guaranteed stability. The resulting algorithms are implemented and inducted into the software package "REGZA".

[PR15] CATID grant **Design of heterogeneous multi-robot service systems**, granting period: 20.03.2003–31.08.2003. Principal investigator: Cezary Zieliński. Investigators: Wojciech Szynkiewicz, Adam Woźniak, Włodzimierz Kasprzak, Andrzej Rydzewski, Tomasz Winiarski, Maciej Staniak.

Investigations are concentrated on some aspects of embodied agents, namely: force control, visual servoing, independent component analysis in the description of textures, design of a mobile robot propelled by six half-wheels.

5 Degrees Awarded

5.1 Ph.D. Degrees

- Michał Warchoł, *Wyznaczanie sterowań na podstawie prognoz wielowariantowych.* Advisor: Krzysztof Malinowski, January 22, 2002

- Ewa Figielska, *Algorytmy szeregowania zadań podzielnych na maszynach równoległych z uwzględnieniem ograniczeń zasobowych i przezbrojeń.* Advisor: Eugeniusz Toczyłowski, March 26, 2002

- Wojciech Tadej, *Analiza własności dualnego algorytmu optymalizacji punktów pracy procesorów nieliniowych.* Advisor: Piotr Tatjewski, June 21, 2002

5.2 M. Sc. Degrees

The following list contains M. Sc. degrees awarded in 2002. A list of the degrees awarded in earlier years are available on Institute's web pages at http://www. ia. pw. edu. pl/.

Advisor: Jarosław Arabas (ISE)

- M. Staniak, T. Winiarski *Nawigacja robotem mobilnym*, 09. 2002

Advisor: Paweł Domański

- P. Ochnio *Pośredni algorytm adaptacyjny i jego wykorzystanie do sterowania pracą wytwornicy pary*, 07. 2002
- P. Wójcik *Bezpośredni algorytm adaptacyjny i jego wykorzystanie do sterowania pracą wytwornicy pary*, 07. 2002

Advisor: Janusz Granat

- P. Celej *Środowisko współdzielenia geograficznie rozproszonych zasobów złożonych z danych, modeli i narzędzi, dla opartej na modelach analizy problemów*, 10. 2002
- P. Rzepakowski *Reprezentacja modeli algebraicznych w rozproszonym środowisku modelowania*, 10. 2002

Advisor: Jerzy Gustowski

- G. Kucharski *Regulator pracy silnika spalinowego wykonany w technice mikroprocesorowej*, 04. 2002

Advisor: Włodzimierz Kasprzak

- F.A. Okazaki *Projekt systemu do testowania metod przetwarzania sekwencji obrazów*, 02. 2002

Advisor: Tomasz Kruk

- M. Mazurowski *Równoważenie obciążenia w rozproszonych systemach operacyjnych*, 04. 2002
- K. Madej *Analiza ruchu w sieciach publicznych*, 10. 2002
- K. Kryszewski *Zwiększanie niezawodności w środowisku rozproszonym*, 10. 2002
- S. Ćmak *Tolerowanie uszkodzeń z wykorzystaniem usług niezawodnej komunikacji grupowej*, 10. 2002

Advisor: Krzysztof Malinowski

- A. Zakrzewski *System symulacji i optymalizacji pracy Wydziału Olejowego PKN ORLEN*, 04. 2002

Advisor: Ewa Niewiadomska-Szynkiewicz

- A. Sikora *Asim/Java - środowisko do rozproszonej symulacji systemów*, 03. 2002

Advisor: Włodzimierz Ogryczak

- M. Zamojski *Zastosowanie porządkowej średniej ważonej w metodzie punktu odniesienia*, 10. 2002

Advisor: Andrzej Pacut

- J. Sobieszek *Analiza substancji aktywnych biologicznie na podstawie obrazów z czujnika komórkowego*, 03. 2002

Advisor: Krzysztof Pieńkosz

- J. Senator *Problem planowania zbiórki w systemie zorganizowanego recyklingu zużytego oleju*, 03. 2002
- T. Żółtowski *Zastosowanie wieloagentowego systemu sterowania operatywnego z elementami ewolucyjnymi do harmonogramowania produkcji*, 05. 2002
- R. Targoński *Metody i algorytmy rozkroju materiałów*, 10. 2002
- M. Prajel *System wspomagania planowania w dystrybucji towarów*, 10. 2002

Advisor: Grzegorz Płoszajski

- M. Antos *Analiza algorytmów porównywania i wyszukiwania tekstów w bazach danych w zastosowaniu do katalogów bibliotek Politechniki Warszawskiej*, 03. 2002

Advisor: Jerzy Pułaczewski

- K. Sztyber *Wybrane zagadnienia modelowania i sterowania neuronowego*, 07. 2002

Advisor: Tadeusz Rogowski

- A. Pajdo *Infrastruktura klucza publicznego. Projekt systemu i analiza wybranego rozwiązania*, 10. 2002
- P. Szalbierz *Informatyczne wspomaganie procesów nauczania na przykładzie Ośrodka Kształcenia na odległość PW*, 10. 2002

Advisor: Andrzej Rydzewski

- A. Kuraś *Uniwersalny czytnik/programator kart elektronicznych*, 04. 2002

Advisor: Franciszek Seredyński

- A. Mroczkowski *Zastosowanie automatów komórkowych w kryptografii*, 04. 2002
- S. Kopczewski *Symulowane wyżarzanie i ewolucyjne wyżarzanie w zastosowaniu do problemu dynamicznego i statycznego szeregowania zadań*, 04. 2002
- M. Władyszewski *Zarządzanie zasobami sieci lokalnych*, 03. 2002
- M. Majdan *Wizualizacja stanu sieci komputerowej*, 06. 2002

Advisor: Andrzej Stachurski

- S. Zegadło *Zastosowanie metod klasyfikacji do oceny wiarygodności kredytobiorcy*, 10. 2002, with honors

Advisor: Cezary Szwed

- S. Folwarski *Rozwój systemu wspomagającego decyzje inwestycyjne. Analiza techniczna papierów wartościowych. Baza danych.*, 03. 2002
- A. Wilk *Rozwój systemu wspomagającego decyzje inwestycyjne w zakresie analizy portfelowej*, 03. 2002
- T. Nitychoruk *Analiza możliwości rozwiązywania problemu rozdziału obciążeń systemu cen krańcowych na rynku energii elektrycznej*, 04. 2002
- G. Gutowski *System wspomagający decyzje inwestycyjne*, 10. 2002

Advisor: Piotr Tatjewski

- Ł. Ferenc *Graficzne środowisko wyboru i testowania metod symulacji komputerowej układów ciągłych*, 04. 2002
- A. Ryćkowski *Układy regulacji PID dwuskładnikowej kolumny destylacyjnej*, 02. 2002

Advisor: Tomasz Traczyk

- M. Marczukajtis *The combined use of XML and databases, applied to CERN's Engineering Data Management System*, 03. 2002
- A. Swęd *Tworzenie uniwersalnych systemów internetowych*, 04. 2002
- J. Guryn *Projekt i implementacja hurtowni danych na przykładzie hurtowni dla dystrybutora podzespołów samochodowych*, 04. 2002
- K. Bohuszewicz *Zastosowanie języka UML i metodyki obiektowej w analizie i projektowaniu repozytorium dokumentacji projektów budowlanych*, 10. 2002

Advisor: Wiesław Traczyk

- R. Kuśmierek *System ekspercki do zastosowań diagnostycznych*, 10. 2002
- P. Podsiadły *Odkrywanie zależności czasowych w danych w postaci reguł epizodycznych*, 10. 2002 , with honors

Advisor: Michał Warchoł

- B. Charliński *Modelowanie rynku dnia następnego*, 10. 2002
- K. Sokolik *Rozszerzenie możliwości serwera internetowego IIS o wysłanie plików od klienta do serwera z uwierzytelnianiem użytkowników*, 10. 2002
- P. Fajkowski *System o architekturze klient - serwer do rozwiązywania zadań optymalizacji zapisanych w języku XML*, 10. 2002
- P. Moszczyński *Równoległa implementacja algorytmu sterowania zespołem zbiorników retencyjnych połączonych niekaskadowo*, 10. 2002 , with honors

Advisor: Andrzej Wierzbicki

- D. Łoniewski *Zarządzanie sieciami IP*, 10. 2002

Advisor: Adam Woźniak

- C. Chudzian *Środowisko graficzne do rozwiązywania zadań optymalizacji globalnej wykorzystujące algorytm Psi - przekształcenia*, 03. 2002

5.3   B. Sc. Degrees

The list contains B. Sc. degrees awarded in 2002. The degrees awarded in earlier years are available at Institute's web pages http://www. ia. pw. edu. pl/.

Advisor: Jerzy Gustowski

- P. Gawryś *Modelowanie obiektów dynamicznych na sterowniku programowalnym Siemens LOGO*, 10. 2002
- Sz. Krawczyk *Sterowanie robota pneumatycznego z wykorzystaniem sterowników programowalnych PLC SIMATIC S5-95U oraz PLC SIMATIC S7-200*, 10. 2002
- B. Latawiec, A.Więckowski *Symulacja obiektów mechanicznych przy pomocy sterowników programowalnych SIMATIC S5*, 10. 2002
- A. Przychodzeń *Wizualizacja procesu sterowania*, 03. 2002

Advisor: Andrzej Karbowski

- K. Szczepański *Środowisko rozwiązywania zadań programowania nieliniowego udostępniane w systemie ASP (Application Service Provider)*, 10. 2002

Advisor: Włodzimierz Kasprzak

- M. Jankowski *Programowa realizacja wizyjnego sensora ruchu drogowego*, 02. 2002

Advisor: Zygmunt Komor

- M. Chmielewski *Modyfikacja stanowiska laboratoryjnego "Silniki elektryczne"*, 07. 2002

Advisor: Tomasz Kruk

- P. Ośko *Techniki translacji adresów jako metoda zwiększania dostępności usług i danych*, 10. 2002

Advisor: K.Malinowski

- J. Grzebielec *Wykorzystanie środowiska do obliczeń równoległych i rozproszonych CSA&S do badania algorytmu typu PFP (Proportional Fairness Pricing) w sterowaniu ruchem w sieci komputerowej w oparciu o metodę cen ze sprzężeniem zwrotnym*, 04. 2002

Advisor: Ewa Niewiadomska-Szynkiewicz

- J. Sitkiewicz *Realizacja i badania obiektowych wersji metod punktu wewnętrznego*, 02. 2002

Advisor: Stefan Romicki

- S. Wdowiak *Sterowanie silnikiem krokowym*, 10. 2002
- T. Zawadzki *Uniwersalne łącze transmisyjne*, 10. 2002
- P. Ruciński *Serwomechanizm cyfrowy*, 10. 2002
- M. Borowski *Serwomechanizm cyfrowy*, 01. 2002

Advisor: Andrzej Rydzewski

- K. Marasek *Karta mostek PCI - magistrala lokalna*, 10. 2002
- D. Smoliński *Mikrokomputerowy miernik siły*, 10. 2002
- A. Powałka *Konwerter A/C przyłączany do portu USB*, 10. 2002
- S. Kapelko *Sterowanie silnikiem krokowym z PC według zadanej trajektorii*, 10. 2002

Advisor: Andrzej Stachurski

- J. Rutkowski *Implementacja nowego wariantu metody gradientów sprzężonych*, 02. 2002
- J. Sosnowski *Modelowanie zadań optymalizacji jedno i wielokryterialnej wspomagającej wybór portfela walutowych strategii opcyjnych*, 03. 2002

Advisor: Wojciech Szynkiewicz

- I. Spinalski *Badanie możliwości wykorzystania Windows NT jako platformy dla sterownika wielorobotowego MRROC++*, 04. 2002
- W. Romaniuk *Programowanie robota mobilnego w systemie LegOS i Linux*, 10. 2002

Advisor: Piotr Tatjewski

- M. Czyżewski *Regulacja dwuwymiarowa i wizualizacja przebiegu procesu w środowisku pakietów SCADA i Soft Control*, 01. 2002

Advisor: Andrzej Wierzbicki

- P. Stasieńko *Komputerowy system wspomagania decyzji rankingowych*, 10. 2002

6 Publications

6.1 Monographs

6.1.1 Scientific or Technical Books

[B1] Piotr Tatjewski, *Sterowanie zaawansowane obiektów przemysłowych. Struktury i Algorytmy*, tom 5 serii monografii Komitetu Automatyki i Robotyki PAN, Akademicka Oficyna Wydawnicza EXIT, Warszawa, 2002

[B2] Eugeniusz Toczyłowski, *Optymalizacja procesów rynkowych przy ograniczeniach*, Akademicka Oficyna Wydawnicza EXIT, Warszawa, 2002

6.1.2 Chapters in scientific or technical books

[Ch1] Janusz Granat, "Analiza wielokryterialna w projektowaniu sieci telekomunikacyjnych", in: Z. Bubnicki, O. Hryniewicz, R. Kulikowski (Eds.), *Badania operacyjne i systemowe wobec wyzwań XXI wieku. Metody i techniki analizy informacji i wspomagania decyzji*, pp. II-21 - II-29, Akademicka Oficyna Wydawnicza EXIT, 2002

[Ch2] Mariusz Kaleta, Włodzimierz Ogryczak, Eugeniusz Toczyłowski, Izabela Żółtowska, "Wielokryterialne wspomaganie decyzji wytwórców na hurtowym rynku energii elektrycznej", in: Z. Bubnicki, O. Hrynkiewicz, R. Kulikowski (Eds.), *Badania operacyjne i systemowe wobec wyzwań XXI wieku. Metody i techniki analizy informacji i wspomagania decyzji*, pp. 31-40, Akademicka Oficyna Wydawnicza EXIT, 2002

[Ch3] Bartłomiej Kubica, Ewa Niewiadomska-Szynkiewicz, "Unconstrained and constrained global optimization using interval analysis", in: Jarosław Arabas (Ed.), *Evolutionary Computation And Global Optimization*, Prace Naukowe Politechniki Warszawskiej, Elektronika, Vol. 139, pp. 185-199, Oficyna Wydawnicza Politechniki Warszawskiej, 2002

[Ch4] Krzysztof Malinowski, "Coordination by price instruments: network congestion control and local problems", in: Jakub Gutenbaum (Ed.), *Automatyka Sterowanie Zarządzanie. Seria Badania Systemowe*, pp. 231-246, Polska Akademia Nauk, Instytut Badań Systemowych, 2002

[Ch5] Przemysław Miazga, Mariusz Kamola, "Global and local optimization algorithms in automated waveguide design", in: Jarosław Arabas (Ed.), *Evolutionary Computation And Global Optimization*, Prace Naukowe Politechniki Warszawskiej, Elektronika, Vol. 139, pp. 123-135, Oficyna Wydawnicza Politechniki Warszawskiej, 2002

[Ch6] Włodzimierz Ogryczak, Andrzej Romaszkiewicz, "Wielokryterialne podejście do optymalizacji portfela inwestycji", in: Tadeusz Trzaskalik (Ed.), *Modelowanie preferencji a ryzyko '01*, pp. 327-338, Wydawnictwo Akademii Ekonomicznej w Katowicach, 2002

[Ch7] Mariusz Rogulski, Cezary Szwed, "Optymalizacja doboru jednostek wytwórczych do pracy na rynku energii elektrycznej", in: Wojciech Tarnowski, Tomasz Kiczkowiak (Eds.), *Polioptymalizacja i komputerowe wspomaganie projektowania, Mielno 2002*, pp. 191-198, WNT, 2002

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[R13] Eugeniusz Toczyłowski, Krzysztof Fleszar, Mariusz Kaleta, Katarzyna Nowosad, Krzysztof Pieńkosz, Mariusz Rogulski, "Rekomendacje proponowanych zmian i poprawek do rozwiązań dobowo-godzinowego Rynku Bilansującego", *ICCE Report*, No. 02-03, 2002

[R14] Eugeniusz Toczyłowski, Izabela Żółtowska, "Analiza symulacyjna zgodności motywacji dla parametrycznego modelu rynku", *ICCE Report*, No. 02-16, 2002

7 Conference Organization

7.1 International Conferences

[ICO1] *SPECT 2002 International Symposium on Performance Evaluation of Computer and Telecommunication Systems*, July 14-18, 2002, San Diego, California, USA.

Krzysztof Malinowski – Program Committee member.

[ICO2] *2002 International Joint Conference on Neural Networks IJCNN'2002*, May 12-17, 2002, Honolulu, Hawaii, USA.

Andrzej Pacut - Program Committee member.

[ICO3] *Eigth IEEE International Conference on Methods and Models in Automation and Robotics MMAR*, Sept. 2-5, 2002, Szczecin, Poland.

Krzysztof Malinowski – Program Committee member.

[ICO4] *4th Workshop on Constraint Programming for Decision and Control CPDC'2002*, Sept. 17, 2002, Gliwice, Poland.

Krzysztof Malinowski — Scientific Committee member, **Piotr Tatjewski** — Scientific Committee member, **Eugeniusz Toczyłowski** — Scientific Committee member.

[ICO5] *Third International Workshop on Robot Motion and Control RoMoCo'02*, Nov. 9-11, 2002, Bukowy Dworek, Poland.

Cezary Zieliński – Program Committee member.

7.2 Local Conferences

[LCO6] *Warsztaty Naukowe Algorytmy Ewolucyjne i Optymalizacja Globalna*, Sept. 23–24, 2002, Kraków, Poland.

Krzysztof Malinowski — Scientific Committee Chairman, **Piotr Tatjewski** — Scientific Committee member, **Paweł Domański** — Organizing Committee member.

[LCO7] *XIV Krajowa Konferencja Automatyki*, June 25–28 2002, Zielona Góra, Poland.

Władysław Findeisen — Program Committee member, **Anatol Gosiewski** — Program Committee member, **Andrzej P. Wierzbicki** — Program Committee member.

[LCO8] *VIII Konferencja Naukowo-Techniczna Rynek Energii Elektrycznej: liberalizacja - szanse i zagrożenia REE'2002*, May 13–15, Kazimierz Dolny, Poland.

Eugeniusz Toczyłowski — Program Committee member

[LCO9] *XIX Ogólnopolska Konferencja Polioptymalizacja i Komputerowe Wspomaganie Decyzji*, June 2002, Mielno, Poland.

Andrzej P. Wierzbicki, Jerzy Pułaczewski — Scientific Committee members, **Eugeniusz Toczyłowski** — Program Committee member.

[LCO10] *Decision Support for Telecommunication and Information Society DSTiS 2002*, Sept. 2002, Warsaw, Poland.

Janusz Granat — Program Committee member.

[LCO11] *Krajowa Konferencja Inżynierii Oprogramowania*, Oct. 2002, Poznań, Poland.

Krzysztof Sacha — Program Committee member.

[LCO12] *Konferencja Naukowo – Techniczna Optymalizacja w elektroenergetyce OPE'02*, Oct. 2002, Jachranka, Poland.

Eugeniusz Toczyłowski — Program Committee member.

[LCO13] *Krajowa Konferencja Optymalizacji i Procesów Dyskretnych*, 2002,

Eugeniusz Toczyłowski — Program Committee member.

[LCO14] *Krajowa Konferencja Badań Operacyjnych i Systemowych*, 2002,

Eugeniusz Toczyłowski — Program Committee member.

[LCO15] Konferencja *Systemy Rozmyte*, Sept. 25, 2002, Kraków, Poland.

Krzysztof Malinowski — Scientific Committee Chairman, **Piotr Tatjewski** — Scientific Committee member.

[LCO16] *IX Konferencja Systemy Czasu Rzeczywistego SCR'02*, Sept. 16-19, Ustroń 2002

Krzysztof Sacha — Program Committee Member.

[LCO17] Konferencja *Automation 2002*, Warsaw. April 2002

Krzysztof Malinowski — Program Committee Member.