Institute of Control
and Computation Engineering

2001 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 are recognized not only in Poland. 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 education 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 to find himself in a group of leading Polish scientists awarded a subsidy of the Foundation of Polish Science. I would also like to compliment dr Włodzimierz Kasprzak on his earning the D.Sc. degree (habilitacja). Also in 2001, Prof. Andrzej Wierzbicki, Dr. Janusz Granat and Dr. Jerzy Paczyński were awarded a prize of Ministry of National Education for their scientific achievements.

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, 2001 (unless marked otherwise)

Control and System Division

Division Head:	Professor Krzysztof Malinowski.
Professors:	Anatol Gosiewski (retired Oct. 2001), Krzysztof Malinowski, Andrzej Pacut, Krzysztof Sacha, Piotr Tatjewski, Cezary Zieliński, Władysław Findeisen (retired), Radosław Ładziński (retired), Jacek Szymanowski (retired).
Assistant Professors:	Agnieszka Bogobowicz (until Aug. 2001), Paweł Domański (part time), Andrzej Karbowski, Włodzimierz Kasprzak, Tomasz J. Kruk, Ewa Niewiadomska-Szynkiewicz, Stefan Romicki, Wojciech Szynkiewicz, Adam Woźniak.
Senior Lecturers:	Jerzy Gustowski, Zygmunt Komor, Andrzej Rydzewski.
Assistants:	Marek Brudka (until March 2001), Rafał Cegieła (since Nov. 2001).
Lecturers:	Piotr Bolek (since April 2001), Michał Warchoł.
Senior Engineers:	Urszula Kręglewska.
Engineers:	Krzysztof Kierzenkowski (since Oct. 2001).
Ph.D. Students:	Jarosław Chrobak, Adam Czajka, Przemysław Jaskóła, Mariusz Kamola, Tomasz Kozak, Adam Kozakiewicz, Bartłomiej Kubica, Rafał Lewczuk, Maciej Ławryńczuk, Andrzej Machnacz, Przemysław Magiera, Michał Andrzej Malarski, Marek Małowidzki, Wolde Mariam, Piotr Marusak, Sebastian Plamowski, Dariusz Radomski (until Nov. 2001), Marek Strzelczyk, Adam Szmigielski, Marcin Szlenk, Wojciech Tadej (until Aug. 2001), Paweł Wawrzyński, Andrzej Zalewski (until Aug. 2001), Maciej Żmuda.

Research of the division is conducted in 4 research groups:

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

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, Z. Komor, S. Romicki, A. Rydzewski, U. Kręglewska, J. Pułaczewski, M. Ławryńczuk, P. Marusak, S. Plamowski, M. Strzelczyk, W. Tadej*)

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, A. Gosiewski, W. Kasprzak, W. Szynkiewicz, M. Brudka*)

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, T.J. Kruk, P. Bolek, R. Cegieła, K. Kierzenkowski, W. Macewicz, P. Misiurewicz, R. Lewczuk, M.A. Malarski, W. Mariam, M. Szlenk, A. Zalewski*)

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, Tomasz Sikorski (until Oct. 2001, part-time), Cezary Szwed, Tomasz Traczyk.

Ph.D. Students: Krzysztof Fleszar, Mariusz Kaleta, Mariusz Rogulski, Tomasz Śliwiński, Krzysztof Tomczyk, Artur Walczak (until Aug., 2001), 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 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 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.

Engineers: Grzegorz Wójcik.

Ph.D. Students: Artur Białecki, 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	1999		2000		2001	
	persons	FTE	persons	FTE	persons	FTE
Academic Staff	33(+3)	30.90(+3)	34(+2)	30.62(+2)	32(+1)	29.23(+1)
by titles/degrees						
Professors	4(+2)	3(+2)	4(+1)	2.83(+1)	3(+1)	2.5(+1)
D.Sc.-s	5(+1)	5(+1)	5(+1)	5(+1)	7	7
Ph.D.-s	18	17.9	19	17.9	16	15.5
M.Sc.-s	6	5	6	4.9	6	4.23
by positions						
Professors	7(+2)	6(+2)	8(+2)	6.83(+2)	9(+1)	8.5(+1)
Associate Professors	(+1)	(+1)	0	0	0	0
Assistant Professors	17	16.9	18	16.9	15	14.5
Senior Lecturers	4	3.5	4	3.5	4	3.5
Lecturers	1	0.5	2	1.4	3	1.73
Assistants	4	4	2	2	1	1
Ph.D. Students	36		32		30	

FACULTY and STAFF	1999		2000		2001	
	persons	FTE	persons	FTE	persons	FTE
Technical Staff	12	9.3	12	9.3	12	9.05
Administrative Staff	6	6	6	5.75	6	5.65

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

ACTIVITIES	1999	2000	2001
Teaching activities			
standard teaching potential, hours	7064	7261	6981
# hours taught	15361	16016	14316
Degrees awarded			
D.Sc.	0	1	1
Ph.D.	3	5	2
M.Sc.	33	49	39
B.Sc.	8	26	32
Research projects			
granted by WUT	22	10	13
granted by State institutions	5	0	3
granted by international institutions	1	1	1
other	4	0	1
Referred publications			
monographs (authored or edited)	0	3	2
textbooks	1	0	1
chapters in books	1	13	20
papers in journals	15	10	20
international	*10*	*10*	13
local	*5*	*0*	7
papers in conference proceedings	30	42	38
international	*14*	*20*	*17*
local	*16*	*22*	*21*
other referred publications	24	9	7
Reports and unreferred publications	45	21	30
Conferences			
participated (# of conferences)	17	29	36
participated (# of part. from ICCE)	38	62	56

RESOURCES	1999	2000	2001
Space (sq.m.)			
laboratories	585	585	585
library + seminar room	74	74	74
faculty offices	724	724	724
Computers			
workstations*	44	20	21
personal computers*	160	222	231
Library resources			
books	4265	4385	4459
booklets	1085	1276	1390
journals subscribed	6	6	7

2 Faculty and staff

Presentation of our faculty starts with Professors Emeriti and then 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).

Books, chapters: [B1, Ch1].

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W.Findeisen@ia.pw.edu.pl

Anatol Gosiewski Professor, retired October 1, 2001, Control and System Division.

For personal data see list of senior faculty.

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tel. 660 7750
A.Gosiewski@ia.pw.edu.pl

Radosław Ładziński Professor, retired January 1998, Control and System Division.

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

room 570
tel. 660 7648
R.Ladzinski@ia.pw.edu.pl

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

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.

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tel. 660 7922
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2.2 Senior Faculty

Agnieszka Bogobowicz Assistant Professor (until Aug. 2001), Control and System Division.

M.Sc. 1976 from WUT, Ph.D. 1987 from Polish Academy of Sciences.

In 1976 she was appointed by the Institute of Meteorology and Water Management. In 1981 the team was moved to the Institute of Geophysics of the Polish Academy

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of Sciences. Between 1988 and 1992 she was a Visiting Assistant Professor in the Departments of Civil Engineering and Earth Sciences of the University of Waterloo, Canada. In 1992 she was offered a regular appointment of an Assistant Professor in the Department of Systems Design Engineering of the University of Waterloo. She held the post until 1996. In 1991 she worked as a visiting scientist at Ecole Polytechnique, France (CNRS grant was obtained). From 1996-1998 she held the posts of an Assistant Professor at the Polish-Japanese Institute of Computer Techniques and the Institute of Biocybernetics and Biomedical Engineering of Polish Academy of Sciences. With WUT 1998–2001; from July, 2001 she is an Associate Professor at Acadia University, Canada. She is a member of the Polish Mathematical Society, American Association for Advancement of Science, Polish Society of Applied Electromagnetism and the IEEE.

Interests: Dynamic systems, scientific computing and information modeling.

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

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tel. 660 7120
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M.Sc. 1991, Ph.D. 1996 from WUT.

With WUT since 1991, half time since 1997.

Interests: Adaptive control, intelligent control, fuzzy logic.

Conference proceedings: [LC14].

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

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tel. 660 7750, 8255280
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pl

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.

Books, chapters: [Ch2].

Journal articles: [LJ2].

Janusz Granat Assistant Professor, Optimization and Decision Support Division.

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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.

Abstract, reports: [A2].

Jerzy Gustowski Senior Lecturer, Control and System Division.

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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.

Conference proceedings: [LC3].

Abstract, reports: [R18].

Principal investigator in: [PR14].

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 integrated services digital telecommunication networks.

Books, chapters: [B2, Ch4, Ch5, Ch6, Ch7, Ch8, Ch11, Ch12, Ch18, Ch19].

Conference proceedings: [IC5].

Abstract, reports: [R12, R22].

Principal investigator in: [PR6].

Project participation: [PR3].

Włodzimierz Kasprzak Assistant Professor, Control and System Division.

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.

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

Books, chapters: [Ch9].

Journal articles: [LJ3, LJ4].

Abstract, reports: [R16].

Project participation: [PR8].

Zygmunt Komor Senior Lecturer, Control and System Division.

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

With WUT since 1964.

room 571
tel. 6607861
Z.Komor@ia.pw.edu.pl

Interests: Automatic control, control instrumentation design and implementation.

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.

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

Journal articles: [LJ5].

Abstract, reports: [U1, U2, U3].

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.

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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), Member of the Scientific Council of the Research and Academics Computer Network Institute (NASK), Member of the Scientific Council of the Industrial Institute for Automation and Measurement(PIAP), Member of the Council on Informatics to the Prime Minister of Poland, 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: [Ch6, Ch7, Ch8, Ch10].

Journal articles: [IJ1, IJ2].

Conference proceedings: [IC1, IC6, LC11].

Principal investigator in: [PR1, PR2, PR7, PR16].

Project participation: [PR3, PR6].

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

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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.

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.

Books, chapters: [B2, Ch8, Ch11, Ch12, Ch13, Ch14, Ch18, Ch19].

Journal articles: [IJ2].

Conference proceedings: [LC9].

Abstract, reports: [R4, R6].

Principal investigator in: [PR1, PR3].

Project participation: [PR7, PR6].

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: [Ch15].

Journal articles: [PH3, PH4, PH5, PH6].

Abstract, reports: [A3, A4, A5, A6, A7, U5, R1, R2, R24].

Project participation: [PR15].

Andrzej Pacut Professor, 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. Member of IEEE and 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: [PH2, LJ1].

Conference proceedings: [IC9, IC10, IC11, IC12, IC13].

Abstract, reports: [R20].

Principal investigator in: [PR16, PR17].

Project participation: [PR3].

Jerzy Paczyński Assistant Professor, 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.

    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: [LJ6].

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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, e.g assembly lines, production management, quality management, library automation, text algorithms.

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Tadeusz Rogowski Senior Lecturer, Optimization and Decision Support Division.

    M.Sc. 1972.

With WUT since 1972, Director of University Computer Center since 1989.

Interests: Computer network, programming languages, operating systems.

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tel. 660 7922, 660 5392
T.Rogowski@ia.pw.edu.pl

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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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: [PR8].

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Krzysztof Sacha Professor, group head, 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 PNE-FAL (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 technology for real-time applications on software specification and design methods, distributed operating systems.

Books, chapters: [Ch2].

Conference proceedings: [IC14].

Principal investigator in: [PR16].

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

    M.Sc. 1994 from WUT. Ph.D. 1999 from WUT.

With WUT since 1999.

Interests: Operation research, discrete optimization, real time control.

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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,

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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.

Books, chapters: [B3].

Journal articles: [IJ3].

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

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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.

Journal articles: [LJ7].

Wojciech Szynkiewicz Assistant Professor, Control and System Division.

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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.

Journal articles: [PH9].

Abstract, reports: [R15].

Principal investigator in: [PR8, PR10, PR16].

Piotr Tatjewski Professor Director of the Institute, group head, 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, decomposition methods in optimization and control, soft computing methods.

Journal articles: [PH7, IJ4].

Conference proceedings: [IC3, IC4, IC7, IC8, IC15, LC10].

Principal investigator in: [PR9, PR11, PR12, PR16].

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 Group, 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.

Interests: Structural approaches to discrete optimization, operations research and management, management information systems.

Journal articles: [LJ7].

Conference proceedings: [IC2, IC17, LC4, LC5, LC6, LC7, LC13, LC15, LC16, LC17].

Abstract, reports: [R23].

Principal investigator in: [PR15, PR16].

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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.

Conference proceedings: [LC18].

Abstract, reports: [U6].

Principal investigator in: [PR13].

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. Member of WUT Committee of Awards, Chairman of FEIT Committee for Ph.D. Degrees in Automatic Control and Computer Sciences, Member of FEIT Committee on Academic Staff Development and Committee of Education. Head of ICCE Optimization and Decision Support Division since 1997.

Interests: Knowledge engineering, expert systems, artificial intelligence.

Books, chapters: [Ch16, Ch17].

Principal investigator in: [PR16].

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), Chairman of its Section on Decision Support Systems (since 1992), Member of the presidium of the Committee of Future Research "Poland in XXI Century" of 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 (since 1995). 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 (since 2000). 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.

Books, chapters: [B3].

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 to present), Member of WUT Library Council (since 1999), Member of WUT Committee for Student Admissions (since 2001).

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

Conference proceedings: [LC19].

Abstract, reports: [R7, R15].

Project participation: [PR3, PR6, PR8].

Cezary Zieliński Professor, group head, 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. Head of ICCE Robotics Group since 1996.

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

Books, chapters: [Ch20].

Journal articles: [PH8, PH9].

Conference proceedings: [IC16, LC1, LC21].

Principal investigator in: [PR16].

2.3 Supporting Faculty and Staff

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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.

Marek Brudka Assistant, Control and System Division.

M.Brudka@ia.pw.edu.pl

M.Sc. 1994 from WUT, Ph.D, 2000 from WUT.

With WUT since 2000.

Interests: Neural networks, robot control, real-time operating systems, modeling and identification.

Rafał Cegieła Assistant, 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.

Krzysztof Kierzenkowski EngineerAssistant until Sep. 2001, Control and System Division.

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M.Sc. 1992 from WUT.

With WUT since 1993.

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

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M.Sc. 1973.

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

Interests: Computer interfaces design.

Włodzimierz Macewicz Senior Software Engineer, Control and System Division.

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M.Sc. 1983 from WUT.

With WUT since 1983.

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

Piotr Misiurewicz Senior R&D Engineer, Control and System Division.

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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.

Jerzy Pułaczewski Senior R&D EngineerRetired Associate Professor, Control and System Division.

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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.

Jerzy Sobczyk Lecturer, Optimization and Decision Support Division.

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M.Sc. 1985 from WUT.

With WUT since 1984. FEIT Network Administrator.

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

Michał Warchoł Lecturer, Control and System Division.

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M.Sc. 1991 from WUT.

With WUT since 1991.

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

Books, chapters: [Ch18, Ch19].

Abstract, reports: [R17].

Project participation: [PR3, PR6].

Grzegorz Wójcik Engineer, Optimization and Decision Support Division.

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M.Sc. 1994 from WUT.

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

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

Abstract, reports: [R20].

Project participation: [PR3].

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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: [IC10].

Abstract, reports: [A1].

Project participation: [PR1].

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Krzysztof Fleszar Ph.D. Student, Operations Research and Management Systems Division. Supervisor: Eugeniusz Toczyłowski

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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: [IC1].

Project participation: [PR1].

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

Conference proceedings: [IC2, LC4, LC5, LC6, LC7].

Project participation: [PR15].

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M.Kamola@ia.pw.edu.pl

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

Books, chapters: [Ch3].

Conference proceedings: [LC8].

Project participation: [PR1, PR3, PR6].

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

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

Abstract, reports: [R9, R12].

Project participation: [PR6].

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

Conference proceedings: [LC9].

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

Conference proceedings: [IC3, IC4, LC10].

Abstract, reports: [R13, R14].

Project participation: [PR9, PR11, PR12].

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

Journal articles: [LJ5].

Abstract, reports: [U4].

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

room 572a
tel. 6607120
P.Magiera@ia.pw.edu.pl

Conference proceedings: [IC5].

Abstract, reports: [R10, R11].

Project participation: [PR3, PR6].

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

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Abstract, reports: [U2].

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

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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, Control and System Division (Process Control Group). Supervisor: Piotr Tatjewski

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tel. 6607673
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Conference proceedings: [IC7, IC8, LC12].

Abstract, reports: [R3, R14].

Project participation: [PR9, PR11, PR12].

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

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Project participation: [PR9, PR11].

Dariusz Radomski   Ph.D. Student (until Nov. 2001), Control and System Division (Control and Optimization of Complex Systems Group). Supervisor: Andrzej Pacut

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Journal articles: [PH1].

Conference proceedings: [IC13].

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

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

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Conference proceedings: [LC14].

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

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

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

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Abstract, reports: [A7, R2].

Wojciech Tadej   Ph.D. Student (until Aug. 2001), Control and System Division (Process Control Group). Supervisor: Piotr Tatjewski

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Project participation: [PR12].

Krzysztof Tomczyk   Ph.D. Student, Operations Research and Management Systems Division. Supervisor: Eugeniusz Toczyłowski

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Conference proceedings: [LC5, LC16, LC17].

Project participation: [PR15].

Artur Walczak   Ph.D. Student (until Aug. 2001), Operations Research and Management Systems Division. Supervisor: Eugeniusz Toczyłowski

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Abstract, reports: [R19, R21].

Project participation: [PR5].

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

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Andrzej Zalewski   Ph.D. Student (until Aug. 2001), Control and System Division (Software Engineering Group). Supervisor: Krzysztof Sacha

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Conference proceedings: [LC20].

Project participation: [PR4].

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

Project participation: [PR3].

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

Conference proceedings: [IC17, LC5, LC7, LC15, LC13].

Project participation: [PR15].

2.5   Administrative staff

Jolanta Cieślewicz	Librarian and office support (part time)
Elżbieta Głowacka	Secretary, Student affairs.
Maria Graszka	Office support.
Elżbieta Matyjasiak	Secretary, Main office.
Bogdan Murzynowski	Technical support (part time)
Jolanta Niedbało	Office support (half-time).
Irena Olszewska	Specialist, Finances (part time). M.Sc. 1979 from Warsaw University.
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 2000/2001

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 –	En	J. Sobczyk (summer)
Control	ECONT	2 – 2 –	6 En	R. Ładziński (summer)
Digital Control Algorithms	CAR	2 – – 1		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		T. Traczyk (summer)
Numerical Methods and Simulation	MNSK	2 – 2 –	5 KSS, 5 SIWD	P. Tatjewski
Evolutionary strategies	MSR	2 – 2 –		P. Domański (summer)
Artificial Intelligence Methods	MSI	2 – – 1		W. Traczyk (summer)
Modeling and Forecasting	MPRO	3 – – 1	6 KSS	A. Pacut (winter)
Numerical Methods	ENUME	2 – 2 –	En	P. Tatjewski (summer)
Operating Systems	EOPSY	2 1 1 –	En	A. Bogobowicz (winter)
Optimization and Decision Support	OWD	2 – – 1		A. Wierzbicki (summer)
Optimization in Operation Research	OBO	2 – – 1		E. Toczyłowski (winter)
Fundamentals of Operation Research	POBO	2 – 1 –	4	K. Pieńkosz (summer), G. Płoszajski (winter)
Fundamentals of Parallel and Distributed Computation	PORR	2 – – 2		A. Karbowski
Fundamentals of Optimization	POPTY	2 – 2 –	5 SIWD	A. Stachurski

Course Title	Course code	Hours per week	Semester	Lecturer
Controls Fundamentals	PRE	2 – 1 –		K. Nowosad (winter), A. Woźniak (summer)
Fundamentals of Control Systems	PSS	2 1 1 –	4	P. Tatjewski (summer), K. Malinowski (winter)
Programming 1	EPRO1	2 1 1 –	En	J. Paczyński (winter)
Programming 2	EPRO2	2 – 2 –	En	A. Stachurski (summer)
Object Oriented Programming	PROO	2 – 2 –	3 P2	W. Kasprzak (summer)
C Programming	PROC	2 – 2 –	2 P2	A. Stachurski
Control Design	PURE	2 – – 2	5 KSS	A. Woźniak
Distributed Operating Systems	RSO	2 – 1 –		T.J. Kruk (summer)
Digital Servomechanisms	SCYF	2 – – 1		S. Romicki (winter)
Computer Networks	SKP2	2 – 1 –	5 KSS, 5 SIWD	J. Sobczyk (winter), T. Rogowski (summer)
Neural Networks	SNUP	2 – – 1		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		K. Malinowski (summer)
Real-time Systems	SCZR	2 – 2 –	6 KSS	K. Sacha
Operating Systems	SOP2A	2 – 2 –	5 KSS, 5 SIWD	A. Bogobowicz (winter), T.J. Kruk (summer)
Process Automatization Techniques	TAP	2 – 1 –		P. Tatjewski (winter)
Microprocessor Techniques	TM	2 1 2 –	5 KSS	A. Rydzewski
Theory of Optimization	TOP	2 – – 1		W. Ogryczak (winter)
Control Theory	TST	2 1 – 1		A. Woźniak (summer)
Logic Circuits	UKLO	2 – 2 –	3 P1	A. Rydzewski
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
Structural Programming	PROS	2 – 2 –	1	J. Paczyński (winter)
Robot Control and Programming	SPRR	2 – – 1		W. Szynkiewicz (summer)
Arts of Negotiations	SNE	2 – – 1	8 SIWD	A. Wierzbicki (winter)
Introduction to Control	WAIT	3 – – –	1	J. Pułaczewski (winter)

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	B.Sc.	preparation to computers, control, and telecommunications area
P2	B.Sc.	preparation to circuits, radio-electronics, and materials area
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

4 Projects

[PR1] The IST Programme IST-1999-2003: **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. Subcontractor: 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 objectives of the QOSIPS project is to develop innovative technologies for supporting Quality of Service management, service differentiation and price setting of Internet Protocol Network Service Providers.

[PR2] Subsidy of the Foundation for Polish Science **Hierarchical and distributed coordination mechanisms for dynamical pricing in computer networks**, granting period: up to four years starting June 2001. Recipient: Krzysztof Malinowski.

The subsidy was awarded to carry research on Hierarchical and distributed coordination mechanisms for dynamical pricing in computer networks. Four doctoral students were awarded research stipends within the subsidy.

[PR3] 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 considered 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. The particular attention will be focused on parallel and distributed computation.

[PR4] KBN grant 7 T11C 02621 **Transformational specification and design of hard real-time embedded software**, granting period 11.10.2001 – 30.9.2002. Coordination: ICCE. 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) so that it includes 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 modelled system, especially verification of timing constraints fulfilment with real-time analysis techniques called Rate Monotonic Analysis (RMA). It is expected that a formal method of specification and design of hard real-time system with a wide range of timing analysis techniques will have been developed.

[PR5] KBN grant PB 7T11A02720 :**Selected Issues on Unit Commitment Problem on Energy Market**, granting period: 26.02.2001– 31.12.2001. Coordination: ICCE. Principal investigator: Artur Walczak.

Research is focused on four major topics: daily scheduling problem optimization, subproblems of unit scheduling, centralized and decentralized market comparison and decision support systems for unit commitment. Discussion of these topics shows need to implement DSSs for both centralized and decentralized markets and its advantages. The paper is presented on conferences and is a part of PhD thesis.

[PR6] CATID grant **Methods of construction and optimization of decision rules for management and determination of financial parameters**, granting period 01.08.00-31.05.01. Coordination: CATID. Participation: ICCE, Institute of

Electronic Systems and Institute of Radioelectronics. Principal investigator: Andrzej Karbowski. Investigators: Jarosław Arabas, Mariusz Kamola, Adam Kozakiewicz, Przemysław Magiera, Krzysztof Malinowski, Przemysław Miazga, Ewa Niewiadomska-Szynkiewicz, Piotr Pondo, Marek Publicewicz, Michał Warchoł, Adam Woźniak.

This grant was devoted to elaboration of new methods of optimization and optimal synthesis for solving some problems of financial mathematics, such as: internet services pricing, production management in a large plant, and portfolio optimization. Different optimization approaches were considered, namely dynamic programming, hierarchical, multicriteria and global optimization. This grant was complementary to CATID and Knowledge Support Systems Group plc (KSS, Manchester, UK) project "e-Pricing and New PriceStrat Optimisation".

[PR7] CATID grant **e-Pricing and New PriceStrat Optimisation**, granting period 01.10.2000 – 31.12.2001. Coordination: CATID. Participation: ICCE, Knowledge Support Systems Ltd., KSS Group plc., Manchester, Great Britain. Principal investigator: Krzysztof Malinowski. Investigators: Ewa Niewiadomska-Szynkiewicz. The aim was to develop and test new versions of linear and nonlinear optimization solvers for optimal prices calculation. The dynamic PriceStrat problem was developed and investigated.

[PR8] CATID grant: **Design and control of mobile robots and manipulators**, granting period 01.10.2000–31.05.2001. Coordination: CATID. Participation: ICCE and Institute of Aeronautics and Applied Mechanics (ITLIMS). Principal investigator: Wojciech Szynkiewicz. Investigators: Marek Brudka, Włodzimierz Kasprzak, Andrzej Rydzewski, Adam Woźniak.

The project consisted of the following tasks: Further development and investigation of a prototype robot POLYCRANK driven by DD motors with 6 d.o.f., advanced control systems for mobile robots and manipulators, design of the modular surveillance mobile robot, localization and navigation in unknown or partially unknown environment, digital image analysis for unmanned vehicle control. The project is divided into two main areas: mechanical design of a new mobile and articulates robot and development of the sensor-based control systems for those robots.

[PR9] CATID grant: **Software development for modeling and advanced control of industrial processes - package REGZA, ver. II**, granting period 01.10.2000–31.05.2001. Principal investigator: Piotr Tatjewski. Investigators: Piotr Marusak, Maciej Ławryńczuk, Sebastian Plamowski.

The aim of the project was to further develop the software package "REGZA", by adding missing blocks and functions and improving the existing first version.

[PR10] Rector's grant 503G/0020/200: **Motion planning methods for multi-robot systems**, granting period 01.09.2000–31.05.2001. Principal investigator: Wojciech Szynkiewicz.

The main objective of the project is to develop a basic methodology of motion planning algorithms for multiple cooperating robots working in unknown or dynamic environment. Cooperation is a vital part of applying multiple robots (especially group of mobile robots) to a single task in an efficient manner. Different types of cooperation between robots are considered from independent robots to tightly coordinated robot teams.

[PR11] 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 aim of the project is to continue investigations concerning predictive control and on-line optimization algorithms. Fuzzy MPC algorithms in various formulations and neural-net based nonlinear MPC algorithms are considered. The analysis is focused also on stability and robustness. The application of the dual-type ISOPE (Integrated System Optimization and Parameter Estimation) on-line optimization algorithm to steady-state tracking is investigated. A book (shortly to be completed) and two Ph.D. theses are supported by the grant.

[PR12] Dean's grant 503G/0180/200: **Supervisory optimizing control algorithms**, granting period 01.09.2000–31.05.2001. Principal investigator: Piotr Tatjewski. Investigators: Piotr Marusak, Maciej Ławryńczuk, Wojciech Tadej.

The project was devoted to supervisory control algorithms where optimization plays an important role. First, the design of model-based predictive control algorithm of DMC (Dynamic Matrix Control) type under uncertainty was investigated. Second, procedures for model-based predictive algorithms for non-linear systems using neural-net modeling were derived. Third, theoretical analysis of the dual-type ISOPE (Integrated System Optimization and Parameter Estimation) method for steady-state optimizing control was carried out, with the results published.

[PR13] Dean's grant 503G/0190/200: **Analysis of possible application of XML and XSL languages in information systems with databases**, granting period 01.07.2000–31.05.2001. Principal investigator: Tomasz Traczyk.

Analysis of possible use of XML language and related languages (XSL, etc.) for information system analysis and design, information storage and processing in databases. Research on existing XML-related technologies in database management systems.

[PR14] Dean's grant 503/G/0170/200: **Integration of control algorithms based upon the model of the object with soft-computing methods**, granting period: 01.10.2000 - 31.05.2001. Principal investigator: Jerzy Gustowski.

The main goal of the project is a trial to prepare a soft-computing control algorithm combining the analytical knowledge of the object (model) with the data derived from experiments.

[PR15] Dean's grant 503/G/0160/009: **Development of models and algorithms for decision support systems in the presence of risk. Application in commodity markets and, in particular, in the electric energy market**, granting period: 01.02.2000 - 31.05.2001. Principal investigator: Eugeniusz Toczyłowski. Investigators: Włodzimierz Ogryczak, Mariusz Kaleta, Izabela Żółtowska, Mariusz Tomczyk.

In this research new nonstandard optimisation models and methods for decision support in the presence of risk are developed. The models are based on using nonstandard asymetric and threshold risk measures. The methods are applied to the decision support system on the electric energy market.

[PR16] Statutory grant 504G/036/9: **Development of methodology of control, decision support and production management**, granting period 01.6.2000 – 15.4.2001 and 1.6.2001 – 15.4.2002. Coordination: ICCE. Principal investigators: Andrzej Pacut, Krzysztof Malinowski, Krzysztof Sacha, Wojciech Szynkiewicz, Piotr Tatjewski, Eugeniusz Toczyłowski, Wiesław Traczyk, Cezary Zieliński.

[PR17] Grant WZ/171/030/98: **Cooperation with Department of Electrical & Computer Engineering at Oregon State University in Corvallis, Oregon, USA**, granting period 01.07.1999–31.05.2001. Coordination: ICCE. Principal investigator: Andrzej Pacut.

Research in the area of neural techniques in biometrics and biosensors. The main effort is focused on development of cytosensors that enable for early detection of biological and chemical threats. In particular, on data analysis methods are investigated for multiple-scene pattern recognition and interpretation. The results obtained so far enabled for application for a U.S. patent "Statistical approach for response detection from sensor arrays".

5 Degrees Awarded

5.1 D.Sc. Degrees

- Włodzimierz Kasprzak, *Adaptive Computation Methods in Digital Image Sequence Analysis*. October 16, 2001

5.2 Ph.D. Degrees

- Rafał Cegieła, *Formalizacja strukturalnego modelu oprogramowania czasu rzeczywistego za pomocą sieci Petriego*. Advisor: Krzysztof Sacha, November 27, 2001
- Dariusz Radomski, *Sterowanie adaptacyjne infuzyjną pompą do dożylnej iniekcji leków*. Advisor: Andrzej Pacut, December 18, 2001

5.3 M. Sc. Degrees

The list contains M. Sc. degrees awarded in 2000 and 2001. The degrees awarded in earlier years are available at Institute's web pages http://www. ia. pw. edu. pl/.

Advisor: Agnieszka Bogobowicz

- Ali Mhammed Benniran *The effect interconnectivity on the stability of Hopfield Network*, 06. 2000

Advisor: Paweł Cichosz, Institute of Electronic Systems

- P. Wawrzyński *Wyznaczanie strategii optymalnej. Połączenie metod klasycznych i metod wywodzących się ze sztucznej inteligencji*, 10. 2001, with honors

Advisor: Paweł Domański

- T. Sałata *Zmodyfikowany nieliniowy algorytm predykcyjny GPC*, 10. 2001
- M. Strzelczyk *Zastosowanie rekurencyjnych sieci neuronowych do modelowania i predykcji nieliniowych układów dynamicznych*, 10. 2001
- S. Plamowski *Wykorzystanie algorytmów genetycznych w modelowaniu*, 10. 2000
- R. Sikora *Sterowanie i symulacja makiety kolejowej*, 04. 2000

Advisor: Janusz Granat

- K. Fleszar *Zastosowanie analizy wielokryterialnej do wspomagania decyzji strategicznych*, 10. 2001, with honors
- P. Pająk *Analiza wielokryterialna przy projektowaniu odpornych na uszkodzenia sieci teleinformatycznych - zagadnienie najkrótszej ścieżki w grafie*, 10. 2001
- J. Chmiel *Systemy symulacji rynku z działającymi przedsiębiorstwami*, 03. 2001
- P. Witan *Integracja matematycznego modelowania problemów decyzyjnych z systemami analitycznych baz danych*, 03. 2001

Advisor: Jerzy Gustowski

- D. Bagiński, J. Marcinek *Stanowisko laboratoryjne do symulacji obiektów sterowania binarnego*, 10. 2001
- R. Kalinowski *System pomiarowy z kartą wizyjną*, 10. 2000

Advisor: Andrzej Karbowski

- A. Kozakiewicz *Zastosowanie uwypuklania w optymalizacji wielokryterialnej, hierarchicznej i globalnej*, 10. 2001, with honors
- T. Chądzyński *FP-SOZ-2000 - uniwersalny system wspomagania decyzji operatora zbiornika retencyjnego w czasie powodzi*, 03. 2000
- J. Błaszczyk *Obiektowa biblioteka do rozwiązywania zadań sterowania optymalnego z czasem dyskretnym*, 12. 2000

Advisor: Włodzimierz Kasprzak

- A. Wróbel *Trójwymiarowa interpretacja ruchu obiektu w sekwencji obrazów cyfrowych*, 10. 2001

Advisor: Tomasz Kruk

- W. Lewicki *Pamięć podręczna plików po stronie klienta w systemie Amoeba*, 03. 2001
- R. Lewczuk *Modularyzacja jądra systemu AMOEBA*, 10. 2000

Advisor: Włodzimierz Macewicz

- M. Szarpak *Ograniczenie dostępu do zasobów Internetu*, 10. 2000

Advisor: Krzysztof Malinowski

- A. Kozak *Wybrane aspekty algorytmów wspomagania inwestycji na rynku obligacji skarbowych*, 10. 2000

Advisor: Jan Mulawka, Institute of Electronic Systems

- G. Tomczuk *Optymalizacja sekwencji odcinków DNA przeznaczonych do obliczeń molekularnych*, 10. 2001

Advisor: Ewa Niewiadomska-Szynkiewicz

- B. Kubica *Metody wykorzystujące pokrycia w optymalizacji globalnej*, 10. 2001, with honors
- I. Żuber *Sieci neuronowe samoorganizujące na zasadzie współzawodnictwa do analizy danych wielowymiarowych*, 10. 2001
- P. Pondo *System wspomagania decyzji służący poprawie jakości wód powierzchniowych*, 03. 2001
- M. Włodarczyk *Metody hierarchiczne w zadaniach optymalizacji inwestycji*, 07. 2000
- T. Pyrka, T. Chmielnicki *Środowisko oprogramowania do symulacji sterowania systemem wielozbiornikowym podczas powodzi*, 06. 2000

Advisor: Andrzej Pacut

- S. Soszyński *Algorytm sterowania neuronowego nieliniowymi obiektami dynamicznymi*, 10. 2000
- A. Czajka *Recognition of Human Signatures Dynamics*, 09. 2000, with honors
- D. Kuźma *Sterownik behawioralny*, 03. 2000

Advisor: Jerzy Paczyński

- A. Bober *Zastosowanie parserów generowanych przy pomocy pakietu ANTLR w trójwarstwowych aplikacjach biznesowych*, 03. 2000

Advisor: Krzysztof Pieńkosz

- K. Chmiel *Algorytmy ewolucyjne w zastosowaniu do rozwiązywania wybranych problemów kombinatorycznych*, 11. 2000
- K. Bednarczyk *Wybrane metody optymalizacji rozkroju materiałów*, 10. 2000

Advisor: Grzegorz Płoszajski

- M. Żebrowski *Wykorzystanie XML w zarządzaniu dokumentami w aspekcie dydaktyki badań operacyjnych*, 11. 2000
- L. Matusiewicz *Projekt struktury informacji o wydawnictwach ciągłych w bazach danych dla bibliotek uczelnianych*, 03. 2000
- T. Twardowski *Wspomaganie dydaktyki badań operacyjnych przy użyciu systemu SAS w wybranych zagadnieniach programowania sieciowego i całkowitoliczbowego*, 11. 2000
- K. Synowiec *Bezpieczeństwo aplikacji baz danych w heterogenicznych środowiskach rozproszonych*, 10. 2000

Advisor: Jerzy Pułaczewski

- K. Sawicka *Regulacja wielowymiarowa nieliniowej kolumny destylacyjnej*, 04. 2000

Advisor: Tadeusz Rogowski

- B. Anszperger, M. Błaszczyk *MultiProtocol Label Switching w sieciach ATM*, 10. 2001
- M. Klejman, P. Wąsik *Zastosowanie teorii optymalizacji do sterowania statkiem kosmicznym w fazie lądowania*, 04. 2001

Advisor: Stefan Romicki

- A. Jakubowski *Przyrząd do zdejmowania charakterystyk częstotliwościowych*, 10. 2000

Advisor: Andrzej Rydzewski

- M. Pabich *Analizator transmitancji obiektów dynamicznych*, 04. 2000

Advisor: Krzysztof Sacha

- D. Kowal *Oprogramowanie urządzenia przewoźnego systemu SNRT2000*, 06. 2001

Advisor: Franciszek Seredyński

- W. Borowy *Równoległe i rozproszone algorytmy optymalizacji funkcji wielu zmiennych*, 11. 2001
- G. Michałek *Wykorzystanie automatów komórkowych i algorytmów ewolucyjnych do problemu szeregowania zadań w systemach wieloprocesorowych*, 10. 2001
- M. Jażdżyk *Odkrywanie z użyciem algorytmu genetycznego reguł automatu komórkowego dla problemu szeregowania zadań w systemach wieloprocesorowych*, 10. 2000
- L. Smolik *Szeregowanie zadań programowania równoległego w systemie dwuprocesorowym z użyciem automatów komórkowych*, 10. 2000

Advisor: Tomasz Sikorski

- P. Kozłowski *Badania symulacyjne wybranych właściwości rynku energii elektrycznej w Polsce*, 11. 2001
- P. Surma *Środowisko do symulacji rynku energii elektrycznej*, 10. 2000

Advisor: Jerzy Sobczyk

- K. Kozioł *Elektroniczna portmonetka jako nośnik wirtualnych pieniędzy w XXI wieku*, 11. 2000

Advisor: Andrzej Stachurski

- O. Lyon *Efektywne algorytmy wyszukiwania zbiorów częstych w dużych bazach danych*, 10. 2001
- A. Białecki *Algorytmy globalne optymalizacji w powiązaniu z klasycznymi algorytmami lokalnej optymalizacji nieliniowej*, 03. 2001
- D. Skierniewski *środowisko do wizualizacji pojęć optymalizacji i działania metod optymalizacyjnych*, 09. 2000
- P. Mączyński *Organizacje wirtualne - model komunikacji*, 03. 2000
- A. Senecki *Organizacja wirtualna - baza danych i interfejs mikropłatności*, 03. 2000
- M. Wilczak *Biblioteka obiektowa gradientowych metod optymalizacji dla zadań minimalizacji bez ograniczeń*, 03. 2000

Advisor: Cezary Szwed

- M. Rogulski *Analiza wybranych modeli problemu doboru jednostek wytwórczych na rynku energii elektrycznej*, 10. 2001, with honors

Advisor: Jacek Szymanowski

- A. Pogorzelski *Zarządzanie pamięcią wirtualną w systemie Minix 2. 0*, 03. 2000

Advisor: Wojciech Szynkiewicz

- K. Wojciechowski, *Budowa i wizualizacja modeli robotów w systemie AVS/Ekspress*, 11. 2000

Advisor: Piotr Tatjewski

- P. Polok *Regulacja programowa i optymalizacja profilu procesu w środowisku pakietów SCADA i Soft Control*, 03. 2001
- M. Raczkowski *Symulator obiektów dynamicznych dla systemu Windows NT*, 03. 2000

Advisor: Eugeniusz Toczyłowski

- K. Tomczyk *Analiza wybranych metod usuwania ograniczeń systemu elektroenergetycznego*, 03. 2001
- Z. Pastuszka *Moduł wspomagający dział sprzedaży w przedsiębiorstwie wytwarzającym napoje gazowane*, 11. 2000
- J. Karwatka *Harmonogramowanie wybranych dyskretnych procesów produkcyjnych z wykorzystaniem metody generacji kolumn*, 10. 2000
- A. Kiepiel *Wybrane metody harmonogramowania jednostek wytwórczych na scentralizowanym rynku energii elektrycznej*, 10. 2000
- W. Nowak *Harmonogramowanie pracy jednostek wytwórczych rynku energii przy istniejących ograniczeniach systemowych stworzonych przez generator modeli ograniczeń systemowych*, 10. 2000
- I. Mileńko *Zagadnienia wspomagania indywidualnego planowania generacji wytwórców na rynku energii elektrycznej*, 09. 2000, with honors

Advisor: Tomasz Traczyk

- T. Pękala *Aplikacje w architekturze trójwarstwowej — dostęp do baz danych poprzez Internet*, 03.2001
- A. Jakubiak *Zastosowanie ORB wg standardu COBRA w sieciach intranetowych*, 03. 2001
- B. Paszkowski *Dostawcy oprogramowania w erze ASP*, 11. 2001
- L. H. Kuma/Ćmak *Projektowanie i programowanie aplikacji z relacyjno-obiektową bazą danych*, 10. 2000
- P. Piłaciński *Systemy zarządzania przepływem pracy. Implementacja procesów biznesowych w środowisku ORACLE WORKFLOW*, 10. 2000
- A. Wiśniewski *Zastosowanie języka XML w systemach zarządzania przepływem pracy*, 10. 2000
- A. Kalinowski *System umożliwiający testowanie algorytmów układających plan zajęć*, 03. 2000

Advisor: Wiesław Traczyk

- M. Motrenko *Wykorzystanie systemu eksperckiego w daktyloskopii*, 03. 2001
- A. Karasiński *Wnioskowanie na podstawie przypadków z warszawskiej Giełdy Papierów Wartościowych*, 11. 2000
- K. Sudnik *System ekspercki do wspomagania inwestowania na Giełdzie Papierów Wartociowych w W-wie*, 11. 2000
- A. Kozieł *Algorytm planowania w sztucznej inteligencji*, 09. 2000

Advisor: Andrzej Wierzbicki

- M. Szczepański *Algorytmy ewolucyjne w wielokryterialnym wspomaganiu decyzji*, 10. 2001

- J. Parzych *Wykrywanie sekwencji interesujących*, 10. 2001

- P. Śliwa *Badania i modyfikacje algorytmu optymalizacji wielokryterialnej prób przewyższania*, 03. 2001

Advisor: Adam Woźniak

- D. Domaniuk *Projektowanie układów regulacji położenia o dużej dokładności*, 10. 2000

Advisor: Grzegorz Wójcik

- A. Raduła *Hierarchiczne bazy danych w serwisach WWW*, 10. 2001

Advisor: Kornel Wydro

- D. Dąbrowski *Projektowanie i realizacja aplikacji intranetowych*, 11. 2001

5.4   B. Sc. Degrees

The list contains B. Sc. degrees awarded in 2000 and 2001. The degrees awarded in earlier years are available at Institute's web pages http://www. ia. pw. edu. pl/.

Advisor: Agnieszka Bogobowicz

- M. Domański *The self-controlled neural network for controlling an inverted pendulum*, 10. 2000

- M. Namavar *Controlling the inverted pendulum by fuzzy logic approach*, 07. 2000

Advisor: Piotr Bolek

- M. Kiełczewski *Workflow - System obiegu dokumentów*, 10. 2001

- A. Lewandowski *Interaktywne serwisy WWW w oparciu o bazy danych*, 03. 2001

- P. Krawczyk *Interaktywne serwisy WWW powiązane z bazą danych*, 03. 2001

- R. Czapliński *Interfejs do konta pocztowego z wykorzystaniem protokółu HTTP*, 03. 2000

Advisor: Janusz Granat

- M. Lewandowski *Metody i narzędzia wspomagające proces zasilania hurtowni danych*, 10. 2000

- M. Nawalny *Przetwarzanie i analiza danych w architekturze klient-serwer*, 10. 2000

Advisor: Jerzy Gustowski

- A. Krupa *Analiza własności sterownika programowalnego w zastosowaniu do komunikacji z urządzeniami peryferyjnymi*, 10. 2001

- R. Kamiński *Identyfikacja i symulacja silnika elektrycznego o ruchu liniowym z odwróconym wahadłem*, 03. 2001

- G. Jędrzejewski *Manipulator dwuosiowy jako obiekt laboratoryjny sterowania binarnego*, 03. 2000

Advisor: Andrzej Karbowski

- R. Hatliński Badania porównawcze metod regulacji nieliniowej, 12. 2001

- M. Wanatowski *Badania porównawcze metod optymalizacji równoległej z dekompozycją bezpośrednią*, 10. 2000

Advisor: Włodzimierz Kasprzak

- R. Jankowski *Detekcja ruchu dyskretnych segmentów obiektu w sekwencji obrazów cyfrowych*, 10. 2001
- A. Okazaki *Projekt systemu do testowania metod detekcji ruchu w sekwencji obrazów*, 10. 2000
- T. Olejniczak *System wstępnej detekcji obiektów ikonicznych zadanej klasy w obrazie cyfrowym*, 10. 2000
- M. Kołota *Klasyfikacja dobrze zdefiniowanych ramek obrazów*, 03. 2001

Advisor: Krzysztof Kierzenkowski

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6.4 Other publications and reports

6.4.1 Conference Abstracts

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[A2] Janusz Granat, "Multi-objective modeling of the decision making problems using SAS software," *SAS European Users Group International, Florece, Italy, May 2001*, p. 16, 2001

[A3] Renata Mansinia, Włodzimierz Ogryczak, M. Grazia Speranza, "LP Solvable Models for Portfolio Optimization: A Survey", *Eight Annual Multinational Finance Society Conference Proceedings, Verona, Italy, June 2001*, pp. 53-54, 2001

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[A5] Włodzimierz Ogryczak, "Large Stochastic Dominance and LP Computable Risk Measures", *European Working Group on Financial Modeling, 28th Workshop in Vilnius, May 2001*, pp. 25-26, 2001

[A6] Włodzimierz Ogryczak, Andrzej Ruszczyński, "Dual stochastic dominance and quantile risk measures", *10th IFORS Special Conference New Trends in Banking Management, Book of Abstracts, Athens, Greece, April 2001*, p. 11, 2001

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6.4.2 Unreferred Publications

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[U2] Tomasz J. Kruk, Michał A. Malarski, "Metody zwiększania niezawodności poprzez zarządzanie procesami", *Instytut Informatyki Politechniki Poznańskiej, Proceedings*, pp. 307-313, 2001

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[U6] Tomasz Traczyk, "Czy już warto używać XML?", *Systemy informatyczne: projektowanie, implementowanie, eksploatowanie, I Seminarium, Warszawa - Aplikacje internetowe na platformie Oracle9i, 29 marca 2001*, pp. 37-54, Stowarzyszenie Polskiej Grupy Użytkowników Systemu Oracle, 2001

6.4.3 Reports

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[R18] Jerzy Gustowski, "Sposoby integracji metod sterowania wykorzystujących model obiektu i metod jakościowych", Raporty Instytutu Automatyki i Informatyki Stosowanej Politechniki Warszawskiej, No. 01-19, 2001

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7 Conference Organization

7.1 International Conferences

[ICO1] *Seventh International Conference on Methods and Models in Automation and Robotics MMAR'2001*, Aug. 2001, Międzyzdroje, Poland.

Krzysztof Malinowski – Program Committee member.

[ICO2] *International Symposium on Performance Evaluation of Computer Systems SPECTS 2001*, July 2001, Orlando, Floryda, USA.

Krzysztof Malinowski – Program Committee member.

[ICO3] *IFAC/IFORS Symposium on Large Scale Systems; Theory and Applications, LSS 2001*, July 2001, Bucarest, Romania.

Krzysztof Malinowski – Program Committee member.

[ICO4] *Second International Workshop on Robot Motion and Control RoMoCo'01*, Oct. 2001, Bukowy Dworek, Poland.

Cezary Zieliński – Program Committee member.

7.2 Local Conferences

[LCO5] *IV Krajowa Konferencja Algorytmy Ewolucyjne i Optymalizacja Globalna*, May 2001, Jastrzebia Góra, Poland.

Krzysztof Malinowski — Program Committee Chairman, **Paweł Domański, Ewa Niewiadomska-Szynkiewicz** — Organizing Committee members.

[LCO6] *VII Konferencja Systemy Czasu Rzeczywistego*, Sept. 2001, Krynica, Poland.

Krzysztof Sacha — Program Committee member.

[LCO7] *VII Krajowa Konferencja Robotyki*, Sept. 2001, Lądek Zdrój, Poland.

Anatol Gosiewski — Scientific Committee Chairman, **Cezary Zieliński** — Scientific Committee member.

[LCO8] *VIII Konferencja Naukowo-Techniczna Rynek Energii Elektrycznej: liberalizacja - szanse i zagrożenia REE'2001*, April 2001, Kazimierz Dolny, Poland.

Eugeniusz Toczyłowski — Program Committee member

[LCO9] *XIX Ogólnopolska Konferencja Polioptymalizacja i Komputerowe Wspomaganie Decyzji*, June 2001, Mielno, Poland.

Andrzej P. Wierzbicki, Jerzy Pułaczewski — Scientific Committee members.

[LCO10] *AUTOMATION 2001 Konferencja Naukowo – Techniczna Automatyzacja – Nowości i Perspektywy*, March 2001, Warsaw, Poland.

Anatol Gosiewski, Jerzy Pułaczewski — Program Committee members.

[LCO11] *Decision Support for Telecommunication and Information Society DSTiS 2001*, July 2001, Warsaw, Poland.

Janusz Granat — Program Committee member.

[LCO12] *Krajowa Konferencja Inżynierii Oprogramowania*, Otwock 2001.

Krzysztof Sacha — Program Committee member.

[LCO13] *Konferencja Naukowo – Techniczna Optymalizacja w elektroenergetyce OPE'01*, Oct. 2001, Jachranka, Poland.

Eugeniusz Toczyłowski — Program Committee member.