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Curriculum vitae

Personal data

Born November 6th, 1957 in Wrocław, Poland.
Citizen of Poland and Sweden.
Swedish civic registration number (personnummer): 571106-1217.
Polish civic registration number (PESEL): 571106-01933.
Married (since 1982), one child (born 1986).
Native language: Polish. Other languages known: English and Swedish (very well), French and Russian (satisfactorily).

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Råbygatan 11B, 223 61 Lund, Sweden
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Education

1981–1985 graduate studies, Institute of Technical Cybernetics, Wrocław University of Technology, Wrocław, Poland
1976–1981 undergraduate studies, Department of Electronics, Wrocław University of Technology, Wrocław, Poland
1972–1976 high school, Wrocław, Poland
1964–1972 primary school, Wrocław, Poland

Degrees received

01.2012 **professor** in Computer Science, Lund University, Lund, Sweden
06.2002 **docent** in Computer Science, Lund University, Lund, Sweden
02.2000 **professor** in Computer Science at Mälardalens Högskola, Västerås, Sweden
07.1987 **PhD**, Wrocław University of Technology, Wrocław, Poland, thesis title: Pewna metoda reprezentacji wiedzy o dynamicznym otoczeniu robota (A Method of Representing Knowledge about the Dynamical Environment of a Robot)
04.1981 **MSc**, Wrocław University of Technology, Wrocław, Poland, thesis title: System generacji i wykonywania planów działań robota III generacji (A Plan Generation and Execution System of 3rd Generation Robot)

Academic Positions

01.2012 – present	Professor, Department of Computer Science, Lund University, Sweden
08.1999 – 01.2012	Associate Professor (universitetslektor), Department of Computer Science, Lund University, Sweden
02.2000 – 07.2000	Professor, Department of Computer Engineering, Mälardalens Högskola, Sweden
12.1995 – 02.2000	Associate Professor (universitetslektor), Department of Computer Engineering, Mälardalens Högskola, Sweden
07.1992 – 06.1998	Research Associate (forskarassistent), Department of Computer and Information Science, Linköping University, Sweden
05.1990 – 06.1992	Guest Researcher (gästforskare), Department of Computer and Information Science, Linköping University, Sweden
02.1989 – 05.1990	Assistant Professor (adiunkt), Institute of Technical Cybernetics, Wrocław University of Technology, Wrocław, Poland
06.1986 – 01.1989	Senior Assistant (starszy asystent), Institute of Technical Cybernetics, Wrocław University of Technology, Wrocław, Poland
08.1984 – 05.1986	Assistant (asystent), Institute of Technical Cybernetics, Wrocław University of Technology, Wrocław, Poland
06.1982 – 07.1984	Assistant (asystent), Institute of Automation, Świętokrzyska Polytechnic, Kielce, Poland
06.1981 – 05.1982	Junior Assistant (asystent stażysta), Institute of Automation, Świętokrzyska Polytechnic, Kielce, Poland

Publications

H-factor: 12 (according to Google Scholar) in January 2017.

I have (co)authored more than 85 papers, obtained 3 patents, and I am the (co)author of 36 technical reports.

Full list is available at <http://cs.lth.se/jacek-malec/my-publications/>

Recent Invited Presentations

- September 2016, Plenary talk at 14th National Conference on Robotics, Polanica, Poland
- October 2013, Wrocław UT, Poland
- May 2012, Lund University, Sweden
- March-May 2010, Wrocław UT, Poland (guest 10-hour lecture series)
- November 2008, Daewoo Research Center, Seoul, Korea
- November 2008, Hanyang University, Seoul, Korea
- November 2007, NTNU, Trondheim, Norway
- February 2007, Olsztyn University, Poland

- January 2007, TU Clausthal, Germany
- May 2005, Bergen University, Norway

Participation in Programme Committees

- IEEE INDIN 2017;
- CESCIT, IFAC conf. on Embedded Systems, Computational Intelligence and Telematics in Control, 2012, 2015;
- AILog, Workshop on AI in Logistics, 2011, 2013;
- EURON Workshop on Knowledge Engineering 2011 (**co-organizer**);
- Scandinavian Conference on Artificial Intelligence, 2015, 2013, 2011, 1997;
- EURON Workshop on Knowledge Representation 2010 (**organizer**);
- IEEE SMC Conference, 2010, 2009, 2008 (**Area Chair**);
- CASE, Computer-Aided Systems Engineering, 2010;
- VCON, IT for Real-World Problems 2010;
- IBERAMIA, Ibero-American International Conference on Artificial Intelligence, 2010;
- CSA, Computer Systems and Applications 2009;
- Workshop on Logics for Resource Bounded Agents, 2007, 2006;
- SAIS (Swedish AI Society) Workshops, 2017 – 2005, yearly;
- RTS, Real-Time Software Workshop at IMCSIT 2016, 2015, 2010, 2009, 2008, 2007;
- AILS 2004, Second Joint Workshop, 2004 (**PC Chair**);
- SAIS and SSLS 2003, First Joint Workshop, 2003;
- Conference and Workshop on Engineering of Computer-Based Systems, 2004, 2003, 2002, 1995;
- IFAC/IFIP Workshop on Real Time Programming, 2009, 2003, 2000
- International Conference in Computing CIC-2002;
- MICAI, Mexican International Conference on Artificial Intelligence 2010, 2009, 2008, 2007, 2006, 2004, 2002;
- Scandinavian RoboCup Committee 1997–1999;
- ECAI'92 Workshop on Specification of Complex Reasoning Systems, 1992.

Besides:

- Treasurer of the organizing committee of IJCAI 2018, to be held in Stockholm, Sweden.

Refereeing

During the last seven years I have been appointed as a referee in a number of lecturer, research assistant (Swedish: forskarassistent), docent and professor employment procedures at Linköping University, Örebro University, Blekinge Technical University and Mälardalen University College.

I have been a referee for *Journal of Logic, Language and Information*, *Robotics and Autonomous Systems* journal, *Applied Intelligence* journal, *Systems Science Journal*, *Software — Practice and Experience* journal, *IEEE Transactions on Systems, Man and Cybernetics*, *IEEE Intelligent Systems*, *International Journal of Applied Mathematics and Computer Science*, *Journal of Computing and Information Technology*, the *Bulletin of the Polish Academy of Sciences*, *Engineering Sciences*, *Robotics and Computer-Integrated Manufacturing* journal, *IEEE Transaction on Automation Science and Engineering*, *Journal of Experimental and Theoretical Artificial Intelligence*, *Journal of Software Engineering in Robotics*, *Robotica*, ...

I have reviewed grant applications for the Netherlands Organisation for Scientific Research and Polish Committee for Science.

Moreover I have been a referee for numerous conferences and workshops in my area of expertise.

I have been a referee for the IEEE Senior Member elevation process since 2011.

Graduate Examination Committees

I have served as a primary referee (opponent) during PhD defences of

- Wen Cao at the University of Tromsø, Norway, December 1997,
- Choong-ho Yi at the University of Linköping, Sweden, October 2002,
- Thomas Ågotnes at the Bergen University, Norway, June 2004,
- Pavel Petrovic at the NTNU, Trondheim, Norway, November 2007.

I have been appointed member in examination committees for the following PhD defences:

- Jonas Mellin (Skövde, 2004)
- Jonas Kvarnström (Linköping, 2005)
- Jens Månsson (Lund, 2005)
- Patrik Hasslum (Linköping, 2006)
- Magdalene Grantson Borgelt (Lund, 2006)
- Li Jun (Örebro, 2006)
- Jens K. Andersson (Lund, 2007)
- Suleyman Malki (Lund, 2007)

- Birger Johansson (Lund, 2008)
- Eva-Marta Lundell (Lund, 2009)
- Peter Floderus (deputy, Lund, 2015)
- Håkan Wärnquist (deputy, Linköping, 2015)
- Mehmet Ali Arslan (deputy, Lund 2016)
- Francesco Rovida (Ålborg, 2017)
- Simon Ståhlberg (Linköping, 2017)

I have been appointed the referee for licentiate (Swedish) theses of Ola Andersson (Linköping, 2000) and Hanna Koszela (Mälardalen University College, 2008).

Formal pedagogical education

I have taken a one-year-long pedagogical course (6 h classes/week during two semesters, total 30 weeks) in the academic year 1985/86 at the Wrocław University of Technology, Poland. I have also taken part in a course on supervision of graduate students (forskarhandledningkurs) organized by the University of Linköping in February 1994. In 1999 I have taken a Leadership Course at the Mälardalen University College.

Graduate-level supervision

- The first student whom I was the primary supervisor for, **Man Lin**, has presented her licentiate thesis (*“Formal Analysis of Reactive Rule-Based Programs”*, Linköping Licentiate Thesis No 643, 1997) and successfully defended her PhD *“Analysis and Synthesis of Reactive Systems: A Generic Layered Architecture Perspective”* in January 2000.
- My second PhD student, **Sławomir Nowaczyk**, has defended his thesis *“Conditional Partial Plans for Rational Situated Agents Capable of Deductive Reasoning and Inductive Learning”* in May 2008.
- **Maj Stenmark** had defended her licentiate thesis *“Instructing Industrial Robots Using High-Level Task Descriptions”* in March 2015, and PhD thesis *“Intuitive Instruction of Industrial Robots, A Knowledge-Based Approach”* in May 2017.
- I supervise now **Mårten Lager**, an industrial PhD student employed by SAAB Kockums AB, in a project entitled *Cognitive Companion for Marine Vessels*.
- Since 1990 I have supervised several graduate students as a supporting supervisor (biträdande handledare). During this period three of them have successfully defended their licentiate theses:

- **Magnus Morin**, “*Predictable Cyclic Computations in Autonomous Systems: A Computational Model and Implementation*”, Linköping Licentiate Thesis No 352, 1992,
- **Per Österling**, “*Symbolic Modelling of the Dynamic Environments of Autonomous Agents*”, Linköping Licentiate Thesis No 386, 1993,
- **Anders Ekman**, “*Exploration of Polygonal Environments*”, Linköping Licentiate Thesis No 561, 1996

and four students have successfully defended their PhD theses:

- **Simin Nadjm-Tehrani**, “*Reactive Systems in Physical Environments: Compositional Modelling and Framework for Verification*”, Linköping, Dissertation No 338, 1994,
- **Magnus Johnsson**, “*Sense of Touch in Robots*”, Department of Cognitive Science, Lund University, 2009,
- **Mats Petter Wallander**, “*Constraint Programming Methods for Optimization of Single Shortest Path Routing*”, Department of Computer Science, Lund University, 2009.
- **M. Mahdi Ghazaei Ardakani**, “*On Trajectory Generation for Robots*”, Department of Automatic Control, Lund University, 2016.

Undergraduate-level supervision

I have supervised more than 50 examination (bachelor and master) projects since 1996.

Besides I was a member of the Masters degree examination committee at the Department of Electronics, Wrocław University of Technology, Poland.

In 1993 I have been several times appointed the function of external examiner (ekstraordinær sensor) at the Faculty of Electrical Engineering and Computer Science of the University of Trondheim, Norway.

Moreover, usually I was the examiner for the undergraduate and graduate courses (or their parts) I have taught.

Until 2011 I have been an examiner for undergraduate examination theses at the Computer Science Department (NF), Lund University.

Teaching Experience

Undergraduate courses given in Sweden

18/19	EDAN95: Applied Machine Learning, LTH, yearly
13/14, 14/15	MMKN30: Service robotics, LTH
10/11 – 17/18	EDA132: Applied Artificial Intelligence, LTH, yearly
12/13 – 17/18	EDAN50: Intelligent systems project, LTH
09/10 – 17/18	EDAN40: Functional Programming, LU, LTH, yearly
07/08, 08/09	DATE11: Data Communication, LU
04, 05, 07	TNE 701: Robot Design (Summer course, for BEST students, LTH)
04/05, 05/06	DAT501: Introduction to Object-Oriented Programming, LU
99/00 – 03/04	DAT117: Machine Learning, LU, bi-yearly
00/01 – 05/06	EDA135: Artificial Intelligence for Robots, LU, LTH, yearly
00/01 – 08/09	DAT032/EDA132: Applied Artificial Intelligence, LU, LTH, yearly
99/00, 00/01	DAT401: Discrete Mathematics, LU
99/00	DAT112: Operating systems, LU
98/99	MM1510: Discrete Mathematics, Mälardalens Högskola (MDH),
98/99, 99/00	CD5310: Multi-agent systems: RoboCup, MDH,
98/99	CD5300: C Programming for engineers, MDH,
98/99	CD5110: Compiler theory, MDH,
96/97	CD2490: Introduction to Computer Science, MDH,
96/97, 97/98	CD2630: Automata, computations and formal methods, MDH,
98/99	CD5110: Artificial Intelligence, MDH
95/96 – 97/98	CD2770: Artificial Intelligence, MDH, yearly
95/96 – 97/98	TDDA14: Artificial Intelligence Programming, Linköping University (LiU), yearly
95/96, 96/97	ETE 137: How to build and control your own mobile robot, LiU
94/95, 95/96	HIBA 01, HIBA08: Introduction to programming and computer engineering, LiU

Graduate courses given at Linköping University, Sweden

1997	Discrete Systems Modelling (an ECSEL course, coordinated by Kris Kuchciński)
1996	Formal specification of reactive systems: theory and practice (prepared together with Simin Nadjm-Tehrani)
1995	Situated robotics
1994, 1998	Systems Modelling
1992, 1996	Introduction to Mathematical Systems Theory
1991, 1994	Architectures of Intelligent Autonomous Systems

Participation in undergraduate courses given at the Wrocław University of Technology, Poland

1989	Lisp (4th year course, 30h lecture, 60h laboratory)
1989	Simulation and Modelling (4th year course, 30h lecture, 30h seminar)
1989	Automation — Devices and Equipment (4th year course, 105h laboratory, 30h project supervision)
1988, 1989	Automation Devices – Design and Assembly (4th year course, 60h laboratory, 30h project supervision)
1988	Knowledge Representation (4th year course, 30h lecture)
1988	PASCAL Programming Language (2nd year course, 45h laboratory)
1982, 1983	Robotics (3rd year course, 30h lecture)
1982	Systems Theory (3rd year course, 30h class)

Administrative Experience

Lund University Between 2002 and 2007 I have been appointed the deputy head of the Department of Computer Science, Lund University. I have been elected a member of the department board (styrelsen) between 2002 and 2007 and since 2016. I have been elected a deputy member of the board between 2011 and 2015. Between January 2005 and December 2010 I have been the head of the theoretical computer science division at the department. In 2006 I have served as deputy member of the lecturer appointment committee (lärarförslagsnämnden) at the Science faculty of Lund University. I am heading the AI@CS research group at the department (ai.cs.lth.se), which recently merged into Robotics and Semantic Systems group (<http://rss.cs.lth.se>). I have attended a formal course for department heads (“prefektkurs”) in November 2002 and a formal course on project leadership in November 2006.

Mälardalens Högskola During the academic year 98/99 I have been the leader of the Computer Science Laboratory at the Department of Computer Engineering, Mälardalen University. I have also been appointed the director of the graduate school at the Department. I have been the member of the executive group (ledningsgruppen) at the Department of Computer Engineering during 98/99. I have also been chosen to the Steering Committee (styrelsegruppen) for the research project STINA involving ABB Automation Products, AB and IDt, MDH. I have taken a formal leadership course in 1999.

Linköping University Since fall 1990 I have taken care of a research group (consisting of graduate students and myself) within the Laboratory of Representation of Knowledge in Logic (RKLLAB), Department of Computer and Information Science (IDA), Linköping University. The group worked on several research projects, the largest belonging to the PROMETHEUS Sweden programme, and since 1991 to the RTI/Sweden programme. Since January 1996 I have been the member of the Autonomous Systems Lab-

oratory (TASLAB) at IDA, where I was responsible for research on autonomous intelligent real-time systems.

Wrocław University of Technology Before that, since 1986 until April 1990 I simultaneously led two research groups working on: theory of knowledge representation and Lisp Machine prototype design and construction. During 1987 and 1988 I also managed a team of researchers working on visual oscillogram registration.

During last 20+ years I have been coordinating undergraduate courses (Swedish: **kursansvarig**) at IDA, LiU, at IDt, MDH and at the Department of Computer Science, Lund University.

Membership

- Swedish Society for Artificial Intelligence (SAIS) since 1991, Member of the Board since 2008, Treasurer since 2010.
- Association for the Advancement of Artificial Intelligence (AAAI), since 1993.
- Institute of Electrical and Electronics Engineers (IEEE, **Senior Member**), since 1992.

Outreach activity

I have taken part in the last nine editions of the yearly information days for high-school students (**Natur/Teknik/Medicinvetardagar**), organised by Lund University. Our lecture, Konstgjord intelligens (artificial intelligence), has attracted more than 100 students each time it was given; I have been giving two lectures each year.

I have supervised student projects at high schools in Lund (Spyken) and in Landskrona.

I have given popular-science lectures on AI for different student groups in Lund.

I have taken part since 2011 in European Robotic Weeks organized in robotics laboratory in Lund, presenting robotics research for public during last week of every November.

Research Grants

- 2015 – 2018 **SARAFun: Smart Assembly Robots with Advanced Functionalities**,
Project of H2020 Programme of the European Commission, 460 KEuro;
- 2012 — 2016 **SMErobotics**,
Integrated Project of the 7th FP of the European Commission, WP Leader, 680 kEuro;
- 2011 — 2014 **PRACE: A Programmable Robot ApprentiCE**,
Small and Medium Collaborative Project of the 7th FP of the European Commission, 660 kEuro;
- 2009 — 2013 **ROSETTA: Robot control for Skilled ExecuTion of Tasks in natural interaction with humans; based on Autonomy, cumulative knowledge and learning**,
Integrated Project of the 7th FP of the European Commission, WP Leader, 770 kEuro;
- 2005 — 2008 **SIARAS: Skill-based Inspection and Assembly for Re-configurable Automation Systems**,
A Specific Targeted Research Project of the 6th FP of the European Commission, 4MSEK;
- 2005 — 2006 **Robot Laboratory**
Crafoordska Stiftelsen, 150kSEK;
- 05.2001 travel grant from **Stiftelsen Bökkelunds fond för reses-tipendier**, 20kSEK;
- 2000 — 2001 **Robot cooperation**
Royal Academy of Sciences, 30kSEK;
- 2000 — 2001 **Research and education in Artificial Intelligence**
Lund University, 300kSEK;
- 1999 — 2000 **Domain-dependent aspects of the search quality in evolutionary algorithms**
a project for Volvo Research Foundation, 350 kSEK/year;
- 1995 — 1998 **Software Architecture for Autonomous Intelligent Real-Time Systems**
a project for TFR (The Swedish National Board for Technical Research), 300 kSEK/year;
- 1992 — 1997 **Autonomous Real-Time Systems**
a project for CENIIT (Center for Industrial Information Technology, Linköping, Sweden), 375 kSEK/year;
- 1994 — 1996 **Software Architecture for Intelligent Real-Time Systems**
a project for Volvo Research Foundation, 300 kSEK/year;
- 1992 — 1993 **A Software System for Real-Time Real-World Environments**
a project for NUTEK (The Swedish National Board for Industrial and Technical Development), 390 kSEK/year;
- 1991 — 1994 **Driver Information Unit**
a project within the DALTM (Driver Assistance and Local Traffic Management) consortium participating in the Swedish RTI program, 800 kSEK/year;
- 1986 — 1990 **Knowledge Representation in AI Systems for Robots**
for Polish Academy of Sciences;
- 1986 — 1990 **LISP Machine** 10
for Polish Academy of Sciences;
- 1987 — 1988 **A System for Oscillogram Registration**
for Polish Institute of Telecommunication.