

# Philipp Althaus

---



Fleminggatan 70  
112 45 Stockholm

070 7348105  
philipp@nada.kth.se

---

## Contents:

- CV
- Technical Skills
- List of Publications

References upon request

## Education

- 1999 – 11/2003 **Royal Institute of Technology (KTH), Stockholm, Sweden**  
Doctoral degree in Technical Sciences at the Centre for Autonomous Systems
- Doctoral thesis entitled:  
Indoor Navigation for Mobile Robots: Control and Representations
  - Published 3 articles in international robotic journals and 5 papers in proceedings of international conferences
  - Winner of the “**IROS2002 Best Paper Award**” for the most outstanding contribution at one of the two largest robotics conferences in the world
- 1992 -1998 **Federal Institute of Technology (ETH), Zürich, Switzerland**  
Diploma in Physics (Dipl. Phys. ETH)
- Specialisation in mathematical methods and particle physics  
average mark of final exams: 5.64 (6 is highest)
  - Diploma thesis at the Institute for Neuroinformatics, mark: 6 (the highest)
- 1995 - 1996 **University College Dublin (UCD), Dublin, Ireland**  
Part of physics degree with the European Erasmus exchange programme
- 

## Employment

- 1999 – 11/2003 **Centre for Autonomous Systems, KTH Stockholm, Sweden**  
Research assistant in connection with the doctoral studies (see above)
- 1/2003 - 5/2003 **Advanced Telecommunications Research Institute (ATR), Kyoto, Japan**  
Guest researcher during my doctoral studies
- 1998 - 1999 **Institute of Neuroinformatics, University/ETH Zürich, Switzerland**  
Research assistant in the robotics group
- Published 2 journal papers and an abstract at an international conference
- 1/1999 - 6/1999 **Nordostschweizerische Kraftwerke, Beznau, Switzerland**  
Mathematics and physics teacher for internal education at a nuclear power plant
- Designed and taught a new course for reactor technicians
- 1994 -1997 **Kantonsschule (College for further education), Wattwil, Switzerland**  
Mathematics and physics teacher over several short periods
- 

## Other Achievements

- 1992 - 1995 Steering committee member of a Swiss scout movement with 5000 members
- 1992 - 1997 Organised and instructed in several courses for scout leaders
- 1990 - 1997 Worked as a licensed ski instructor for one week a year
- 1987 - 1992 Played handball on a competitive level in the Swiss league
- 

## Personal Information

- Date of birth: April 24<sup>th</sup>, 1972  
Nationality: Swiss
- Languages: German: native, Swedish and English: fluent, French: intermediate  
Hobbies: All kinds of outdoor activities (kayaking, hiking, long-distance ice-skating), socialising, running (Stockholm marathon), golf (handicap 25), floorball, skiing

## Technical Skills

### Systems

Broad experience of system design and implementation through working with indoor and miniature mobile robots for more than 5 years

- Dealt with all kinds of aspects related to system integration
- Extensive modelling for large software systems
- Experience with real-time demands
- Used a variety of different sensory systems including ultrasound, laser, infrared, cameras, and sensitive skin
- Applied different object recognition techniques
- Vast experience with handling of odometric data
- Implemented various learning techniques (including neuronal nets)

### Software

Experience in software design for controlling and simulating mobile robots and managing the necessary user interfaces

- Extensive object oriented modelling (including UML)
- Particular experience in interaction with all kinds of hardware
- Applied different techniques for interprocess communication
- Programming languages C, C++, Java, Oberon

Worked with various operating systems including UNIX/Linux, Windows, Mac OS

Experience with other kind of software

- Different robot simulation software
- Analysing and processing data with Matlab (basic programming)
- Various web technologies (XHTML, XML, CSS, Applets, CGI, Servlets, RMI, Corba)
- All kinds of text processing tools

### Theoretical

Very strong mathematical background

- Specialised in mathematical methods of physics during undergraduate studies

Theoretical education in computer science

- Took a large variety of courses related to the PhD programme, including nonlinear systems analysis, advanced algorithms and machine learning

## List of Publications

All the following publications can be downloaded at:  
<http://www.nada.kth.se/~philipp/Publications>

### Journal Papers

- Althaus P. and Christensen, H.I. A framework for anchoring in hybrid deliberative systems. Submitted to *Autonomous Robots*, 2003.
- Althaus P. and Christensen, H.I. Behaviour coordination in structured environments. *Advanced Robotics*, 17(7):657-674, 2003.
- Althaus P. and Christensen, H.I. Smooth task switching through behaviour competition. *Robotics and Autonomous Systems*, 44(3-4):241-249, 2003.
- Verschure P.F.M.J. and Althaus P. A real-world rational agent: Unifying old and new AI. *Cognitive Science*, 27(4):561-590, 2003
- Verschure P.F.M.J. and Althaus P. The study of learning and problem solving using artificial devices: Synthetic epistemology. *Bildung und Erziehung*, 52(3):317-333, 1999.

### Conference Papers

- Althaus P., Ishiguro H., Kanda T., Miyashita T. and Christensen H.I. Navigation for human-robot interaction tasks. In *Proceedings of the IEEE International Conference on Robotics and Automation*, to appear 2004.
- Althaus P. and Christensen H.I. Automatic map acquisition for navigation in domestic environments. In *Proceedings of the IEEE International Conference on Robotics and Automation*, pages 1551-1556, 2003.
- Althaus P. and Christensen H.I. Behaviour coordination for navigation in office environments. In *Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems*, pages 2298-2304, 2002. Winner of the **IROS2002 Best Paper Award**
- Althaus P. and Christensen H.I. Smooth task switching through behaviour competition. In *Intelligent Autonomous Systems 7*, pages 9-17. IOS Press, Amsterdam, NL, 2002.
- Althaus P., Christensen H.I. and Hoffmann F. Using the dynamical system approach to navigate in realistic real-world environments. In *Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems*, pages 1023-1029, 2001.
- Althaus P. and Verschure P.F.M.J. Distributed Adaptive Control 5: Bayesian theory of decision making, implemented on simulated and real robots. In *Proceedings of the Third International Conference on Cognitive and Neural Systems*, Abstract, 1999.

### Theses

- Althaus P. Indoor Navigation for Mobile Robots: Control and Representations. Doctoral thesis, Numerical Analysis and Computer Science, Royal Institute of Technology (KTH), Stockholm, 2003.
- Althaus P. Distributed Adaptive Control 5: Bayesian theory of decision making, implemented on simulated and real robots. Diploma thesis, Institute of Neuroinformatics, University/ETH Zurich, 1998.