Markus Buchholz

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https://markusbuchholz.github.io/

Research Interests

Robotics, autonomous systems, robot motion control, whole-body dynamics, trajectory optimization, and simulations.

Education

Gdansk University of Technology   Jan 2010 – Dec 2012
Ph.D. in Mechatronics
Research: Real-time algorithm to control nonlinear robot systems.

Gdansk University of Technology   Sep 1998 – Jun 2003
Master's in Electronics, Telecommunication, and Computer Science
Grade: A

Gdansk University of Technology   Mar 2002 – Mar 2004
Master's in Economy and Management
Grade: A

Professional Experience

Postdoctoral Researcher in Underwater Robotics   Sep 2023 – Present
Heriot-Watt University, Scotland

Senior Software Engineer - Robotics   Mar 2023 – Sep 2023
Yaskawa Robotics, Germany

Founder   Jul 2020 – Sep 2023
Buchholz Robotics, Norway

Senior Robotics Engineer   Mar 2022 – Sep 2022
Zivid, Norway

Principal Software Engineer   Jan 2018 – Jul 2020
Canrig Robotics, Norway

R&D Senior Engineer - Motion Control   Mar 2014 – Dec 2017
ABB Robotics, Norway

Senior Engineer - Subsea Control Systems   Mar 2012 – Feb 2014
Equinor (Statoil), Norway

R&D Senior Engineer - Ship Electrical Power Systems   Jan 2011 – Feb 2012
Rolls-Royce, Norway

Senior Engineer - Subsea Control Systems   Apr 2008 – Dec 2010
General Electric, Norway

Electrical Engineer (Shipyard)   Apr 2006 – Dec 2007
Rysjedal Elektro AS, Norway

Teaching and Courses

Teaching Assistant - Robotics Systems Science Sep 2023 – Present
Heriot-Watt University

Technical Support, BSc Project, Chen XIANGRU Jan 2024 – Present
LLM-Driven Behavior Trees for Autonomous Underwater Robotics
Heriot-Watt University

Technical Support, MSc Project, Baudouin BELPAIRE 2024
Waste Collection Pipeline on BlueBoat
Heriot-Watt University

Creator (Online Course): Behavior Trees for ROS2 2022
The ConstructSim

Creator (Online Course): Reinforcement Learning for Robotics) 2020
The ConstructSim

Creator (Online Course): Machine Learning for Robotics (ROS) 2020
The ConstructSim

Fellowships and Awards

Golden Award from the Rector of Gdansk University of Technology **2004**

Scholarship, Gdansk University of Technology (Computer Science) **1998–2003**

Scholarship, Gdansk University of Technology (Economy) **2002–2004**

Multiple Medalist in Track and Field (Decathlon) **1990–1998**

Publications

All publications are available online at: https://scholar.google.com/citations?user=YnoZFxwAAAAJhl=no

Technical Skills

C++, Python, ROS 2, Docker, Linux, MATLAB, StoneFish, GazeboSim, MoveIt2,
Pinocchio, Crocoddyl, ArduPilot.

Passions

Robotics, Cycling, Linux, ROS 2.