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

Professional Service

Organizing Committee Member: AQ²UASIM Workshop, ICRA 2024, USA **May 2024**

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, Awards, and Patents

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**

Technical Patent: Slip Wear Detection System, USA **2022**

Technical Patent: Inventory System Design, USA **2024**

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.