ROBIN WEISS

PERSONAL DETAILS

Born in Germany, 03 February 1989

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PROFESSIONAL EXPERIENCE

Since March 2019 **Perception Engineer, Robert Bosch GmbH**

Perception Engineering

Customer-specific implementation of radar-based driving automation systems
Extended object tracking and road boundary estimation using high-resolution radar point clouds · Data reduction of radar point clouds for runtime optimisation · Video sensor data fusion · Student supervisor for a master thesis on dimension estimation of dynamic objects based on local occupancy grid maps · Emergency response officer

May 2018 – Oct 2018 **Robotics Researcher, UFRGS**

Research Project

Φ-Robotics Research Lab, Federal University of Rio Grande do Sul, Brazil
Developed hybrid localisation algorithms using sequential Monte Carlo simulation and non-linear bounded-error state estimation based on interval analysis

Dec 2015 – Jun 2016 **Application Engineer, Elmos Semiconductor**

Application Engineering

3 Months at Elmos Semiconductor Technology Co., Ltd. in Shanghai, China
Developed a prototype for a real-time aerosol detector, including a classification algorithm, and provided on-site support and training for customers.

Nov 2014 – Jun 2015 **Research Intern, University of Granada**

Research Project

Research Centre for Information and Communications Technologies in Granada, Spain
Joint research project with the Department of Neurology of the Ludwig Maximilian University of Munich, Germany: *Human Body Motion Analysis of Patients with Neurodegenerative Diseases by Means of Inertial Sensors* · Implemented a Kalman filter that estimates the orientation angles of the lower extremities from inertial data.

EDUCATION

Dec 2015 – Nov 2018 **Münster University of Applied Sciences**

Master of Science

Computer Science · *Specialisation in Pattern Recognition and Machine Learning*
Tutor for Mathematics during 1st semester.
Thesis: *Hybridisation of Sequential Monte Carlo Simulation with Non-linear Bounded-error State Estimation Based on Interval Analysis Applied to Global Localisation of Mobile Robots*

Oct 2010 – Jun 2015 **Münster University of Applied Sciences**

Bachelor of Science

Electrical Engineering · *Specialisation in Communications Engineering*
Tutor for Mathematics during 3rd and 4th semester.
Thesis: *Kalman Filtering Applied to Pitch Angle Estimation from Inertial Data of the Lower Extremities*

Jan 2014 – Jun 2014 **University of Portsmouth, United Kingdom**

Exchange Semester

School of Engineering · *Specialisation in Digital Systems Design*
Implemented a digital modulation system based on a field-programmable gate array.

Feb 2012 – Sep 2013 Rettungsdienst Kreis Gütersloh

Apprenticeship

Training as a paramedic · Six-month theoretical training at DRK Rettungsschule Westfalen, Münster and subsequent practical work as a paramedic.

Jan 2010 – Apr 2010 Studieninstitut Westfalen-Lippe, Bielefeld

Professional Training

Training as an emergency medical technician · Clinical training at Klinikum Gütersloh, practical training at Rettungsdienst Kreis Gütersloh.

Aug 2006 – May 2008 Carl-Miele-Berufskolleg, Gütersloh

Evening Classes

University entrance qualification in electrical engineering, obtained in evening classes.

Aug 2005 – Mar 2009 Stadtwerke Gütersloh

Apprenticeship

Training as an electrician · *Specialisation in Energy and Building Technology*
Enhanced my manual skills while solving real-life practical problems.

PUBLICATIONS

December 2019 Hybridisation of Sequential Monte Carlo Simulation with Non-linear Bounded-error State Estimation Applied to Global Localisation of Mobile Robots

Journal of Intelligent & Robotic Systems

Autoren: Robin Weiss, Peter Glösekötter, Edson Prestes, Mariana Kolberg

Accurate self-localisation is a fundamental ability of any mobile robot. Four hybrid localisation algorithms are proposed, combining probabilistic filtering with non-linear bounded-error state estimation based on interval analysis and were applied to global localisation of an underwater robot. It was shown that the novel algorithms can solve the wake-up robot problem as well as the kidnapped robot problem more accurately than conventional probabilistic filters and drastically lower computational cost compared to previous hybrid methods.

EXTRA-CURRICULAR ACTIVITIES

Since Sep 2013 Paramedic, Kreis Gütersloh

Part-time Employment

Approximately 50 hours per month as a paramedic at the ambulance service of the district of Gütersloh, Nov 2018 – Feb 2019 full-time, since March 2019 approx. 36 h p. m.

Apr 2009 – Dec 2009 Round Trip Australia

Work and Travel

Took casual employment while travelling around Australia by car. Set up fairground rides and worked as security employee at funfairs.

COMPUTER AND LANGUAGE SKILLS

Programming

C/C++, Matlab, Python, LaTeX, Git, Bitbucket, Jira, Confluence, Google Test, SiL

Languages

English · CEFR C1

Interests

Emergency medical services, sports and travelling (50 countries) · Cycled from Germany to Venice (1700 km / 17 days), Istanbul (3400 km / 26 days) and Gibraltar (3800 km / 21 days), respectively, in three consecutive years.

November 20, 2021