

Bernhard Großwindhager

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Personal Details:

18/09/1988 • Austrian • Male

Career Experience

Product Marketing Manager UWB/loT, NXP Semiconductors, Graz, Austria

Oct 2020 –

- Definition of go-to-market strategy, new use cases, business models, system architectures, and product specifications to enhance the Ultra-wideband (UWB) ecosystem around the vehicle and mobile phone. The aim is to make UWB an integral technology of the IoT and a digitalized world.
- Size target markets and define value propositions and lead customers.
- Contribution to the IEEE 802.15.4 standard defining low-rate wireless personal area networks

Research Assistant / PhD candidate, Graz University of Technology, Graz, Austria

Apr 2016 – Jun 2020

- Generated hypotheses in the field of wireless communication and localization using ultra-wideband (UWB) technology. Submitted and presented the contributions at top-tier conferences and journals.
- Developed real-time adaptation algorithm to provide robust UWB communication links.
- Designed a low-cost UWB indoor positioning system exploiting multipath information to cut down required infrastructure to a single physical anchor.
- Developed GPS-like highly scalable UWB positioning system allowing update rates of 2.3 kHz independently of number of devices. The work was awarded with the Best Paper Award at the A* conference IPSN 2019.
- Authored the dissertation 'Robust, Efficient, and Scalable UWB-based Positioning using Multipath and Quasi-simultaneous Transmissions' incorporating all the hypotheses and findings.

Co-Founder, cortEXplore GmbH, Linz, Austria

Jan 2019 - Jun 2020

- Developed a highly accurate surgical navigation system.
- Applied for startup- and scientific grants.
- Responsible for the hardware-related aspects of the company's strategy.
- The company was awarded with the EDISON 2018 and the i2B business plan award 2019.

Guest Researcher, University of California, Berkeley, United States

Oct 2018 – Jan 2019

- Aligned research expertise of TU Graz and UC Berkeley to identify potential fields of cooperation.
- Collaborate with the research group lab11 to design efficient UWB-based positioning systems.

Development Engineer and Project Manager, Magna Steyr Eng. AG & Co KG, Graz Austria

Feb 2015 – Mar 2016

- Managed overall operations of R&D projects, including vehicular communication and connectivity.
- Designed and improved Magna Steyr Car-2-X communication platform.
- Validated advanced driver assistance systems and automated driving functions.
- Crafted concepts for indoor/outdoor vehicular positioning system based on GPS, UWB, and BLE.

Research and Development Engineer, Virtual Vehicle Research Center, Graz, Austria

Nov 2013 – Oct 2014

- Interacted with key researchers to set up hypotheses regarding vehicular communication systems.
- Investigated applicability of Car-2-X standards by implementing six use cases on Cohda Wireless platforms.
- Integrated the Car-2-X platform into series vehicles.

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- Authored the master's thesis 'Implementation and Verification of a Standards-Compliant Car-2-X Demonstrator' incorporating the key findings.

Research and Dev. Engineer, g.tec medical engineering GmbH, Graz/Schiedlberg, Austria Oct 2008 – Sep 2012

- Designed real-time signal processing algorithms and Electroencephalography (EEG) / Electrocorticography (ECoG)-based Brain Computer Interfaces with MATLAB/Simulink.
- Developed an impedance measurement system to identify conductivity of EEG electrodes.
- Built hardware and software, including PCB design, control engineering for robots, firmware programming in C, visualization and analysis tools in MATLAB and C++.

Teaching Assistant, TU Graz - Institute of Microwave and Photonic Eng., Graz, Austria Mar 2012 – Jun 2012

- Teaching assistant for the lecture 'Fundamentals of RF and Microwave Engineering'.

Guest Researcher, Asahikawa Medical University, Asahikawa, Japan Jul 2011 – Sep 2011

- Developed ECoG-based Brain Computer Interfaces in MATLAB/Simulink.
- Verified and validated real-time brain mapping methods using ECoG in clinical settings.

Automation Engineer, Advanced Machine & Engineering Co., Rockford, IL, United States Apr 2008 – Jun 2008

- International internship in the United States.
- Designed PLC control software (Mitsubishi systems) for industrial band saws.

Education

Doctoral Program, Information and Communications Engineering (with distinction), 2020
Graz University of Technology, Graz, Austria

Master's Program, Electrical Engineering, Information and Communications Technology / Digital
Signal Processing (with distinction), 2014
Graz University of Technology, Graz, Austria

Exchange Semester, Supported by a scholarship from AVL List GmbH, 2013
Delft University of Technology, Delft, Netherlands

Bachelor's Program, Electrical Engineering, Microelectronics and Circuit Technique (with distinction), 2012
Graz University of Technology, Graz, Austria

Technical Secondary School (HTL), Electronics and Computer Engineering (with distinction), 2007
HTL Steyr, Steyr, Austria

Certifications

Nationally Certified Skiing Instructor, Certified Amateur Radio Operator

Awards & Honours

Winner of the accelerator program Gründungsgarage Vol. XIV | Best Paper Award @ IPSN 2019
Marshall Plan Scholarship 2018 | Best Demo Award @ SenSys 2017 | Best Poster Award @ EWSN 2017
Magna Steyr Innovation Award 2015 - Top 5 | 2nd Place "T-Systems Young Innovation Award" 2007
GIT Award 2007 of the Austrian Society of Electrical Engineering for Achievements in Inform. and Comm. Techn.
1st Place "Innovation & Economy in Upper Austria" (TMG-Award) 2007 Category: "Special Award - Health"

Languages

German: Mother Tongue | English (fluent, C2) | Spanish (basics, A1) | Dutch (basics, A1)