PERSONAL INFORMATION

Bernhard Großwindhager

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Sex Male | Date of birth 18/09/1988 | Nationality Austrian

EDUCATION AND TRAINING

Apr 2016 – Present

Doctoral program   Dr. techn.

Graz University of Technology, Graz (Austria)

Information and Communications Engineering

PhD Thesis: Robust, Efficient, and Scalable UWB-based Positioning using Multipath and Quasi-simultaneous Transmissions

Mar 2012 – Oct 2014

Master's program   Dipl.-Ing.

Graz University of Technology, Graz (Austria)

Electrical Engineering - Information- and Communications Technology / Digital Signal Processing

Master's Thesis: Implementation and Verification of a Standards-Compliant Car-2-X Demonstrator

Feb 2013 – Jul 2013

Exchange semester

Delft University of Technology, Delft (Netherlands)

Supported by a scholarship from AVL List GmbH Graz, Austria

Oct 2008 – Mar 2012

Bachelor's program   BSc

Graz University of Technology, Graz (Austria)

Electrical engineering – Microelectronics and Circuit Technique

Bachelor Thesis: Research and Development of ASICs in Biomedical Devices

Sep 2002 – Jun 2007

Technical Secondary School (HTL)

HTL Steyr, Steyr (Austria)

Specialization: Electronics and Computer Engineering

Thesis: Brain Computer Interface

WORK EXPERIENCE

Apr 2016 – Present

Research Assistant / PhD candidate

Graz University of Technology, Graz (Austria)

- Real-time adaptation algorithm to provide robust ultra-wideband (UWB) communication links
- Design of a low-cost UWB indoor positioning system exploiting multipath information to cut down the required infrastructure to a single physical anchor
- Development of a GPS-like highly scalable and responsive UWB positioning system that allows theoretical update rates of up to 2.3 kHz independently of the number of tags. The work was awarded with the Best Paper Award at the A* conference IPSN 2019.

Jan 2019 – Present

Co-Founder

cortEXplore GmbH, Linz (Austria)

Development of a highly accurate surgical navigation system

Oct 2018 – Jan 2019

Guest Researcher at UC Berkeley

University of California, Berkeley (United States)

- Collaborate with the research group lab11 to design efficient UWB-based positioning systems

Feb 2015 – Mar 2016	## Development Engineer, R&D Electrics/Electronics Department
	MAGNA STEYR Engineering AG & Co KG, Graz (Austria)

- Project manager R&D projects (Vehicular Communication, Connectivity, and Automated Driving)
- Design and improvement of a Car-2-X communication platform
- Validation of advanced driver assistance systems (ADAS) and automated driving functions (ADF)
- Indoor/outdoor positioning systems for vehicles

Nov 2013 – Oct 2014	## Research and Development Engineer
	Virtual Vehicle Research Center, Graz (Austria)

- Investigate applicability of Car-2-X standards by implementing six use cases on Cohda Wireless platforms
- Integration of the Car-2-X platform into series vehicles

Mar 2012 – Jun 2012	## Teaching Assistant
	TU Graz - Institute of Microwave and Photonic Engineering, Graz (Austria)

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

Jul 2011 – Sep 2011	## Guest researcher at Asahikawa Medical University, Japan
	Asahikawa Medical University, Department of Neurosurgery, Asahikawa, Hokkaido (Japan)

- Development of Electrocorticography (ECoG)-based Brain Computer Interfaces in MATLAB/Simulink
- Verification of real-time brain mapping methods using ECoG

Nov 2008 – Sep 2012	## Research and Development Engineer
	g.tec medical engineering GmbH, Graz/Schiedlberg (Austria)

- Real-time signal processing with MATLAB/Simulink
- Design of EEG/ECoG-based Brain Computer Interfaces
- Impedance measurement system to identify conductivity of EEG electrodes
- Hardware/Software Development (PCB design, control engineering for robots, C, C++,...)

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

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

PERSONAL SKILLS

Mother tongue	German
Other languages	English (fluent, C2)
	Spanish (basics, A1)
	Dutch (basics, A1)
Other skills	Project management, Nationally certified skiing instructor, Certified amateur radio operator

AWARDS

- Best Paper Award @ IPSN 2019
- Marshall Plan Scholarship 2018
- Best Demo Award @ SenSys 2017, Best Poster Award @ EWSN 2017
- Magna Steyr Innovation Award 2016 - Top 5
- GIT Award 2007 of the Austrian Society of Electrical Engineering for Achievements in Information and Communication Technology
- 1st Place "Innovation & Economy in Upper Austria" (TMG-Award) 2007
  Category: "Special Award - Health"
- 2nd Place "T-Systems Young Innovation Award" 2007