



## EDUCATION



11/2021 – CURRENT	Doctoral Programme – Automatic Control, Robotics and Vision <b>Institute of Industrial and Control Engineering – Universitat Politècnica de Catalunya (ESP)</b> Doctoral thesis: <i>Autonomous and Collaborative Robotic Systems in 5G Smart Factories</i>
04/2018 – 02/2021	Master of Science – Robotics, Cognition, Intelligence <b>Department of Informatics – Technical University of Munich (GER)</b> Master's thesis: <i>Blending Task and Motion Planning using Learning from Demonstration and Reinforcement Learning</i>
10/2013 – 04/2018	Bachelor of Science – Engineering Science <b>Munich School of Engineering – Technical University of Munich (GER)</b> Bachelor's thesis: <i>Computer Vision in an Automotive Context: High Dynamic Range Imaging with a Dual Camera System</i>

## DOMINIK URBANIAK

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[LinkedIn](#)

[Website](#)



## SKILLS

### Programming

Python      C++      Matlab  
Linux      Docker

### Robotics

Task planning      Motion Planning  
Kinematics      Gazebo      CoppeliaSim  
ROS 2      MoveIt!      Human-Robot Interaction  
(Distributed) Control

### Computer Vision

OpenCV      Stereo cameras      HDR imaging  
Point clouds      Calibration

### Artificial Intelligence

Reinforcement learning      Regression  
Supervised learning      Classification  
Neural Networks      PyTorch

### Soft Skills

Collaborative      Organized      Presentations  
Communication      Problem-solving



## PUBLICATIONS

- Distributed Control for Collaborative Robotic Systems Using 5G Edge Computing.  
IEEE access. (2024)
- Edge computing in autonomous and collaborative assembly lines.  
ETFA. (2022)
- Combining task and motion planning using policy improvement with path integrals.  
Humanoids. (2021)



## WORK EXPERIENCE



11/2021 – 02/2025	Early-Stage-Researcher (ESR) – Horizon 2020 5GSmartFact <b>Universitat Politècnica de Catalunya – Barcelona</b> <b>Including 18-month secondment at Roboception GmbH – Munich</b> <ul style="list-style-type: none"> <li>Contribution to three project deliverables about 5G-aware industrial applications.</li> <li>First-author journal publication of an interdisciplinary analysis of latency measurements from distributed control experiments for collaborative robotics using 5G edge computing.</li> <li>Development of a fast method for generating smooth and optimal collision-free trajectories from point clouds. Successfully tested in simulation and with the real hardware.</li> <li>First ESR representative in the supervisory board of the project, creating a shared calendar for better course scheduling, main organizer of an ESR workshop to improve collaborations.</li> </ul>
11/2018 – 09/2019	Working Student – IIoT Innovation Center <b>Accenture GmbH – Garching</b> <ul style="list-style-type: none"> <li>Programming user interfaces to illustrate the opportunities of machine learning in predictive maintenance, and supervised learning and generative models in computer vision.</li> </ul>
03/2016 – 09/2016	Intern – Quality and Supplier Management <b>BMW AG – Munich</b> <ul style="list-style-type: none"> <li>Weekly moderation of an international meeting to improve the communication between the supplier and the BMW production sites.</li> <li>Collection and preparation of quality metrics to monitor the performance of the suppliers.</li> </ul>
07/2014 – 12/2014 03/2015 – 04/2015 08/2013 – 09/2013	Working Student – Automotive Quality Management <b>Infineon Technologies AG – Neubiberg</b> <ul style="list-style-type: none"> <li>Responsible for creating and distributing Production Part Approval Process (PPAP) documents on request for international customers.</li> </ul> Intern – Metalworking <b>Kottmaier CNC – Bergkirchen</b> <ul style="list-style-type: none"> <li>Operating CNC turning and milling machines for metal part production.</li> </ul>

## VOLUNTEERING



06/2023 – 10/2024	HR Generalist – European Young Engineers (EYE) Responsible for onboarding new members by contacting applicants, and creating and setting up their Google Workspace accounts.
05/2017 – 10/2021	Badminton Youth Coach – TSV Eintracht Karlsfeld Responsible for weekly training sessions, supervision at tournaments, organizing events.