

# Jon Arrizabalaga

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## EDUCATION

- **Carnegie Mellon University** Pittsburgh, USA  
*Visiting PhD - Robotics Institute (RI); Advisor: Prof. Zachary Manchester* January 2024 - Present
- **Technical University of Munich** Munich, Germany  
*PhD - Robotics & Control; Advisor: Prof. Markus Ryll* November 2020 - Present
- **KTH Royal Institute of Technology** Stockholm, Sweden  
*Master of Science - Mechatronics* September 2018 - July 2020
- **Shanghai Jiao Tong University - University of Michigan** Shanghai, China  
*Bachelor of Science - Mechanical Engineering* September 2017 - January 2018
- **University of Navarre** San Sebastian, Spain  
*Bachelor of Science - Mechanical Engineering* September 2014 - July 2018

## EXPERIENCE

- **Bosch Research** Renningen, Germany  
*MSc Thesis - Robotics Researcher; Advisors: Dr. Niels van Duijkeren, Dr. Ralph Lange* January 2020 - July 2020
- **Porsche AG** Weissach, Germany  
*Intern - Test Field; Advisor: Eric Preising* May 2019 - September 2019

## PUBLICATIONS

- *Geometric Slesh-Free Tracking for Robotic Manipulators*; Jon Arrizabalaga, Lukas Pries, Riddhiman Laha, Runkang Li, Sami Haddadin, Markus Ryll; IEEE International Conference on Robotics and Automation (ICRA), Yokohama, Japan, 2024 — Paper, Code, Video, Talk
- *Learning for CasADi: Data-Driven Models in Numerical Optimization*; T. Salzmann, J. Arrizabalaga, J. Andersson, M. Pavone, M. Ryll; Learning for Dynamics and Control Conference (L4DC), 2024 — Paper, Code, Talk
- *Pose-Following with Dual Quaternions*; J. Arrizabalaga, M. Ryll; IEEE Conference on Decision and Control (CDC), Singapore, 2023 — Paper, Code, Talk
- *SCTOMP: Spatially Constrained Time-Optimal Motion Planning*; J. Arrizabalaga, M. Ryll; IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Detroit, USA, 2023 — Paper, Video
- *Spatial Motion Planning with Pythagorean Hodograph curves*; J. Arrizabalaga, M. Ryll; IEEE Conference on Decision and Control (CDC), Cancun, Mexico, 2022 — Paper, Video, Talk
- *Towards Time-Optimal Tunnel-Following for Quadrotors*; J. Arrizabalaga, M. Ryll; IEEE International Conference on Robotics and Automation (ICRA), Philadelphia, USA, 2022 — Paper, Video
- *Neural-MPC: Deep learning model predictive control for quadrotors and agile robotic platforms*; T. Salzmann, E. Kaufmann, J. Arrizabalaga, M. Pavone, D. Scaramuzza, M. Ryll; Robotics and Automation Letters (RA-L), 2022 — Paper, Code
- *A caster-wheel-aware MPC-based motion planner for mobile robotics*; J. Arrizabalaga, N. van Duijkeren, M. Ryll, R. Lange; IEEE International Conference on Advanced Robotics (ICAR), Ljubljana, Slovenia, 2021 — Paper, Video, Thesis

## TEACHING

- **Engineering Mechanics I** Technical University of Munich  
*Lecturer; Enrolled students: 200 (21-22), 350 (22-23) and 450 (23-24)* Winter Semesters 21-22, 22-23 and 23-24
- **Introduction to ROS (Robot Operating System)** Technical University of Munich  
*Lecturer; Enrolled students: 50* Summer Semesters 21-22 and 22-23

## HONORS & AWARDS

- **Best PhD Lecturer Award** Technical University of Munich  
*Recognizes the PhD lecturer who has received the highest evaluations from BSc and MSc students within the Aerospace and Geodesy faculty* Winter Semester 21-22
- **Outstanding End-of-Degree Award (finalist)** University of Navarre  
*Honors BSc. students who have excelled in both their academic and extracurricular endeavors* Years 14-18

## INVITED TALKS

- **Vijay Kumar Lab - GRASP Laboratory** University of Pennsylvania  
*Prof. Vijay Kumar* May 24
- **Robotics and Perception Group** University of Zurich  
*Prof. Davide Scaramuzza* April 22
- **Institute of Flight Systems** German Aerospace Center, DLR  
*Prof. Stefan Levedag* January 23

## STUDENTS MENTORED

- **Harun Tongay Tamtürk** *now at* Airbus Defence and Space  
*Semester Thesis:* Flight Corridor Planning for Navigation of UAVs within Dynamics Environments  
*MSc. Thesis:* Vision-Based Localization of High-Altitude UAVs
- **Bruno Sorban** Rocket Factory Augsburg  
*Semester Thesis:* Optimal Trajectory Control of a Hopper Rocket, Code

## GRANTS RECEIVED

- **International Connecting Talent** Fomento San Sebastian, 2020  
*Support to pursue a 6-month project in scientific or technical research* 1500 €/month

## REVIEW ACTIVITIES

- IEEE Robotics and Automation Letters (RA-L)
- IEEE International Conference on Robotics and Automation (ICRA)
- IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)
- Robotics Science and Systems (RSS)
- IEEE Control Systems Letters (L-CSS)
- IEEE Conference on Decision and Control (CDC)

## REFERENCES

- **Prof. Markus Ryll** Technical University of Munich  
*markus.ryll@tum.de* Munich Institute of Robotics and Machine Intelligence (MIRMI)
- **Dr. Ralph Lange** Bosch Research  
*ralph.lange@de.bosch.com* Head of Robotics Research Portfolio
- **Dr. Niels van Duijkeren** Bosch Research  
*Niels.vanDuijkeren@de.bosch.com* Research Scientist / Project Lead