⚠ **I AM IN THE JOB MARKET** ⚠

Last updated: October 11, 2024

Jon Arrizabalaga

Email: jon.arrizabalaga@tum.de, Portfolio: jonarriza96.github.io

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*

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*

Publications

- *A Universal Formulation for Path-Parametric Planning and Control*; J. Arrizabalaga, M. Ryll; Under review, 2024 — Paper, Code
- *Differentiable Collision-Free Parametric Corridors*; J. Arrizabalaga, Z.Manchester, M. Ryll; IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Abu Dhabi, UAE, 2024 — Paper, Code, Video, Talk
- *PHODCOS: Pythagorean Hodograph-based Differentiable Coordinate System*; J. Arrizabalaga, F. Vega, Z. Sir, Z. Manchester, M. Ryll; Under review, 2024 — Paper, Code
- *Geometric Slosh-Free Tracking for Robotic Manipulators*; J. Arrizabalaga, L. Pries, R. Laha, R. Li, S. Haddadin, M. 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

⚠ **I am in the job market** ⚠

Last updated: October 11, 2024

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

now at

- **Harun Tongay Tamtürk** — 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*