

TURCAN TUNA

Personal Details

Nationality:	Cypriot (EU-28/EFTA)
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Education

- 2023 ~ Eidgenössische Technische Hochschule Zürich (ETHz), Doctorate Mechanical and Process Engineering
- 2019 ~ 2022. Eidgenössische Technische Hochschule Zürich (ETHz), Robotics, System and Control **GPA: 5,5 / 6**
- 2015 ~ 2019 Istanbul Technical University, Control & Automation Engineering (BSc), **Control and Automation Engineering 1st place, GPA: 3,74 / 4**
- 2013 ~ 2018 Istanbul Technical University, Mechanical Engineering (BSc), Mechanical Engineering **1st place, GPA: 3,68 / 4**

Research Interests

Robust Localization and Mapping, Dense 3D Reconstruction, Implicit Representations, Applied Robotics.

Research and Publications

- **Tuna, T.**, Nubert, J., Nava, Y., Khattak, S., & Hutter, M. (2022). X-ICP: Localizability-Aware LiDAR Registration for Robust Localization in Extreme Environments. arXiv preprint arXiv:2211.16335. (**Under-Review**)
- Arm, P., Waibel G., Preisig J., **Tuna T.**, Zhou R., Bickel V., Ligeza G., Kehl F., Kolvenbach H., & Hutter, M. (2022) Scientific Exploration of Challenging Planetary Analog Environments with a Team of Legged Robots (**Under-Review**)
- **Tuna, T.**, Beke, A., & Kumbasar, T. (2022). Deep learning frameworks to learn prediction and simulation focused control system models. *Applied Intelligence*, 52(1), 662-679.
- **Tuna, T.**, Ovur, S. E., Gokbel, E., & Kumbasar, T. (2020). Design and development of FOLLY: A self-foldable and self-deployable quadcopter. *Aerospace Science and Technology*, 105807.
- **Tuna, T.**, Ovur, S. E., Gokbel, E., & Kumbasar, T. (2018, October). FOLLY: A Self Foldable and Self Deployable Autonomous Quadcopter. In 2018 6th International Conference on Control Engineering & Information Technology (CEIT) (pp. 1-6). IEEE. **Best Paper Award**.

Experiences

- 2022 May. – 2023 Feb. Scientific Assistant at Robotics Systems Lab (RSL), **Research Engineering**
- 2021 Nov. – 2022 May. LiDAR Localizability Aware Constrained Optimization for Robust Robot Pose Estimation, Robotics Systems Lab (RSL) ETH Zürich, **Master's Thesis**
- 2021 March – 2021 Sept. Perception Engineering Internship, ANYbotics, **Internship**
- 2019 Sept. – 2021 March, Super Mega Bot (SMB) **Lead Mechanical Designer**, Autonomous Systems Lab (ASL) ETH Zürich, **Part-Time working**
- 2020 July – 2021 Jan., Deep Learning Augmented Robocentric EKF for Visual Inertial Odometry, Autonomous Systems Lab (ASL) ETH Zürich, **Semester Project**
- 2020 Feb. -2020 July, ARbotics: Soft Real-Time Interactive Simulation and Visualization Framework in AR for Robotic Systems Based on ROS, **Course Project**
- 2019, “Deep Learning Framework for Learning Prediction and Simulation Focused Models” Control and Automation Engineering. **BSc Thesis**

- 2018 June-Sept., Personal Robotics Lab. **Internship** – Imperial College London
- 2018, “Semi-Autonomous RC Drone Station Including Quadcopter Storing, Battery Storing and Exchanging Capabilities Design / Prototype Along with Semi-Autonomous Folding Arm Quadcopter Design / Prototype” Mechanical Engineering. **BSc Thesis**

Software Knowledge

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| • C++ Programming Language | – Advanced |
| • Python Programming Language | – Intermediate/Advanced |
| • ROS & Bash | – Advanced |
| • Tensorflow 2.0 / Pytorch | – Intermediate/Advanced |
| • Git & Docker | – Intermediate |
| • MATLAB / SIMULINK | – Advanced |
| • SOLIDWORKS (Professional) | – Advanced |
| • MSC ADAMS | – Intermediate |
| • AutoCAD | – Advanced |

References

- Prof. Dr. Marco Hutter – Legged Robotics, Robotics System Lab (RSL) ETH Zurich.
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- Prof. Dr. Roland Siegwart – Robotics, Autonomous Systems Lab (ASL) ETH Zurich.
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- Prof. Dr. Tufan Kumbasar – Fuzzy Logic, Process Control, Artificial Intelligence and Intelligent Systems (AI2S) Lab, Istanbul Technical University.
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- Prof. Dr. Yiannis Demiris – Human Centered Robotics, Personal Robotics Lab (PRL) Imperial College London.
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