CURRICULUM VITAE

RESEARCH INTERESTS

I am a second-year PhD student at the TUM 3D AI laboratory, focusing on semantic scene understanding in 3D contexts under Angela Dai's guidance. My academic journey aims to deepen this expertise while also exploring industrial potential. By establishing international collaborations, attending key conferences, and engaging in industrial internships I am driven to bridge academia and AI innovation, contributing to both realms.

PERSONAL INFORMATION

Name	David Rozenberszki	**E-Mail**	david.rozenberszki@tum.de
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Webpage	https://rozdavid.github.io/	**GitHub**	https://github.com/RozDavid

STUDY PROGRESS

2021 -	PhD Candidate at Technical University of Munich, 3D AI Laboratory.
2020 – 2021	Eotvos Lorand University Computer Science for Autonomous Systems. With honours, *Outstanding diploma work* of the class, GPA: 4.92 **MSc Thesis**: Building Semantic Maps of the World (Topics: visual SLAM, 3D stereo matching, 3D reconstruction, semantic segmentation, geometry segmentation)
2020	KTH Royal Institute of Technology, Summer School on Big Data Analytics
2019 – 2020	Technical University Berlin, EIT Digital Master School program, Autonomous Systems major. GPA: 1.65 (equiv. 4.35 EU GPA)
2015 – 2019	Budapest University of Technology and Economics, Mechatronic Engineering BSc, Integrated Engineering specialization, excellent graded diploma. GPA: 4.71 **BSc Thesis**: Autonomous Flight of Miniature Air Vehicles in Intelligent Space (Topics: visual motion tracking, nonlinear control algorithms, real-time communication, and quadratic polynomial trajectory optimization)

PUBLICATIONS

2018	**„The MTA SZTAKI micro aerial vehicle and motion capture arena"** David Rozenberszki and Andras Majdik, 12th Hungarian Conference of Image Processing and Pattern Recognition, oral presentation. [Paper]
2020	**„LOL: Lidar-only Odometry and Localization in 3D point-clouds"** David Rozenberszki and Andras Majdik, 2020 ICRA conference (International Conference on Robotics and Automation), oral presentation. [Paper, Code]
2021	**"Towards Universal User Interfaces for Mobile Robots"** David Rozenberszki and Gábor Sörös, a multi agent localization demonstration paper for the Augmented Humans Conference, 2021 February 22-24, demonstration presentation. [Paper]

2021	**"3D Semantic Label Transfer in Human-Robot Collaboration"** D. Rozenberszki, G. Sörös, A. Lőrincz, semantic mapping and online semantic information sharing from multiple perspectives. ICCV 2021 CVinHRC workshop oral presentation. [Paper, Code]
2022	**"Language-Grounded Indoor 3D Semantic Segmentation in the Wild"** D. Rozenberszki, Or Litany, Angela Dai. Ground 3D features with language anchors. ECCV 2022. [Project page, Code]
2023	**"UnScene3D: Unsupervised 3D Instance Segmentation for Indoor Scenes"** D. Rozenberszki, Or Litany, Angela Dai. Fully unsupervised 3D instance segmentation. ArXiv preprint 2023. [Project page]
2023	**"DiffCAD: Weakly-Supervised Probabilistic CAD Model Retrieval and Alignment from an RGB Image"** D. Gao, D. Rozenberszki, S. Leutenegger, A. Dai. Fully probabilistic single view CAD retrieval with diffusion models. ArXiv preprint 2023. [Project page]

PROFESSIONAL SKILLS

- Python, C++, C#, Java
- CUDA, OpenCV, ROS
- SQL, NoSQL
- Linux, Unity, Docker
- Pytorch, TensorFlow, Keras
- NumPy, Scikit, Pandas, PySpark

LANGUAGE

English	C1 level proficiency
German	B2 level knowledge

EXPERIENCES

Nokia Bell Labs **2020 - 2021**	**Working in a research team for Spatial AI topics** 3D instance segmentation and semantic geometry reconstruction from RGBD images. Simulating photorealistic environments in Unity for synthetic training data generation and domain adaption. Collaborative visual SLAM: Stereo, RGBD or mono SLAM, co-localization by spatial anchors, AR glasses for visualization of spatially aware robot user interfaces.
DAI Lab Berlin **2019 – 2020**	**The building of an autonomous race car** Fast Lidar based localization and semantic segmentation-based path planning. Technologies: Keras, PyTorch, FastSLAM
MTA SZTAKI **(Hungarian Academy of Sciences, Machine Perception Laboratory)** **2018 – 2019**	**Lidar Odometry and Localization** Pure Lidar based localization algorithm creation and optimization Technologies and algorithms: ROS, C++, Segmap, Loam **Image processing-based Brain and Liver segmentation** Medical 3D PET and CT image segmentation Technologies: Matlab, U-Net CNN, Image Processing

CHARACTERISTICS

I'm an open-minded, responsible person with great social skills, conflict-avoiding, but goal-oriented. Always listening to others, eager to make a compromise, find the teamwork much more motivating. I perform better under pressure and in essential situations.

To summarize, I consider myself a fast learner, who adapts easily to unplanned and planned situations. I enjoy working with teammates for a goal, that I find challenging.