MERT KIRAY

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Education

TUM, Master of Science Informatics, Munich   Oct 2020 – Aug 2023
- **Relevant Coursework:** Computer Vision, Deep Learning, Machine Learning
- **GPA:** 1.5

Koç University, BSc in Computer Engineering, Istanbul   Sep 2012 – Jan 2018

Work Experiences

***Computer Vision Student Researcher,* Technical University of Munich,** Munich   Apr 2022 - Apr 2023
- Worked as a research assistant in the 6G digital twin project at the Chair of Media Technology at TUM
- Conducted research on different contrastive learning methodologies on point clouds for different downstream tasks.

***Co-Founder & AI Researcher,* Octovan,** Istanbul   Jun 2017 - Sept 2020
- As CTO, orchestrated developer teams and technology selection.
- Conducted research on AI research projects with a specific emphasis on projects dedicated to route optimization and enhancing warehouse management.

***Co-Founder & AI Researcher,* Jigglypop,** Istanbul   Sept 2018 - Sept 2020
- Created a customer action prediction using seq2seq approach in Python with PyTorch

***Teaching Assistant,* Koc University,** Istanbul   Jul 2017- Oct 2017
- Helped students to solve their questions about mobile device programming codes and graded projects

***Software Intern,* Accenture Digital,** Istanbul   Aug 2016 - Nov 2016
- Developed machine learning packages for a robotic arm using Python and PyTorch

Notable Projects

Master Thesis, Exploiting Multi-Modality Context for Enhanced Online Adaptive Pseudo-Labeling of Point Clouds
- ***Supervisor: PD Dr. Ing. Habil. Federico Tombari***
- Devised and implemented various contrastive learning techniques using 2D images and point clouds to enhance point cloud pseudo-labeling.
- Investigated and evaluated the efficacy of multiple pseudo-labeling strategies in conjunction with multi-modal learning.

Weakly-supervised Semantic Segmentation through Projective Cycle-consistency
- **Supervisor: Prof. Dr. Nassir Navab**
- Employed self-supervised segmentation techniques to autonomously learn intricate scene understanding tasks with limited annotations, specifically in medical contexts such as surgical operating rooms.

***Lidar Constraint NeRF on Outdoor Scenes*,** Source Code
- **Supervisor: Prof. Dr. Matthias Nießner**
- Utilized Lidar as an additional depth constraint for Neural Radiance Fields (NeRF) on outdoor scenes, expanding the field of view and improving scene understanding in autonomous driving applications.

***3D Object Part Segmentation with Self-supervised Learning*,** Source Code
- **Supervisor: Prof. Dr. Angela Dai**
- Validated the effectiveness of self-supervised learning in achieving state-of-the-art results with limited label availability, revolutionizing the approach to 3D object part segmentation.

Skills

Programming Languages: Python, C/C++, Java

Framework/Libraries: PyTorch, PyTorch Lightning, NumPy, Spring Boot, OpenCV, AWS