

Cafer Mertcan Akcay

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EDUCATION

ETH Zurich <i>Master of Science in Robotics, Systems and Control</i>	Zurich, Switzerland <i>Sept 2021 – Present</i>
Bilkent University <i>Bachelor of Science in Electrical and Electronics Engineering, CGPA: 3.93/4.00</i>	Ankara, Turkey <i>Aug 2017 – June 2021</i>
Nanyang Technological University <i>Exchange Student in Electrical and Electronic Engineering</i>	Singapore <i>Jan 2020 – May 2020</i>

EXPERIENCE

Disney Research Studios <i>Research Intern</i> <ul style="list-style-type: none">Working on multimodal machine learning architectures to perform audio-to-video synchronization on in-the-wild videos.	Zurich, Switzerland <i>Sept 2022 – Present</i>
ETH Media Technology Center <i>Research Assistant</i> <ul style="list-style-type: none">Developed a face tracker which approximates the 3D models of people's heads by training a deep neural network using face images and a 3D Morphable Face Model.Developed a pipeline for generating synthetic photo-realistic videos of people given an arbitrary source audio recording.	Zurich, Switzerland <i>Nov 2021 – Aug 2022</i>
Robotics and Perception Group <i>Semester Thesis</i> <ul style="list-style-type: none">Implemented a communication interface between a drone and an offboard computer for low-latency communication which makes it possible to have more agile autonomous drones with higher thrust-to-weight ratios.Trained reinforcement learning policies in a simulated environment to fly the agile drone in a racing arena autonomously and successfully tested these policies in real world.	Zurich, Switzerland <i>Nov 2021 – Apr 2022</i>
ASELSAN <i>Research and Development Intern</i> <ul style="list-style-type: none">Conducted research on Multiple Object Tracking and implemented several algorithms to track multiple objects in a clutter.	Ankara, Turkey <i>June 2020 – Aug 2020</i>
Scientific and Technological Research Council of Turkey (TUBITAK) <i>Research and Development Intern</i> <ul style="list-style-type: none">Worked on image processing tasks and trained object detection models.	Ankara, Turkey <i>June 2019 – July 2019</i>

PUBLICATIONS

- Ayça Takmaz*, Jonas Schult*, Irem Kaftan[†], Mertcan Akçay[†], Bastian Leibe, Robert Sumner, Francis Engelmann, and Siyu Tang (2022). “3D Segmentation of Humans in Point Cloud with Synthetic Data”. In: arXiv:2212.00786. (under review)

PROJECTS

Interactive Exploration for Mapping Perception and Learning for Robotics Course Project	Mar 2022 - June 2022
<ul style="list-style-type: none">Trained an autonomous agent in simulation using reinforcement learning to make it learn how to interact with the environment such that it can create more accurate instance-level maps of the scenes.	
Monocular Visual Odometry Vision Algorithms for Mobile Robotics Course Project	Dec 2021 - Jan 2022
<ul style="list-style-type: none">Developed a monocular visual odometry pipeline to estimate local trajectories of moving agents using camera images and tested its performance on publicly available and custom datasets.	
Human-Machine Collaboration Using AR Mixed Reality Course Project	Oct 2021 – Jan 2022

- Developed an app for HoloLens 2 to visualize and plan changes on the real world terrain data so that these changes can be deployed on the autonomous walking excavator.

Autonomous Robot | *Bachelor Thesis*

Sept 2020 – June 2021

- Created an autonomous robot which is able to perform target detection via scene matching and navigation via fusion of LIDAR and stereo camera.
- Implemented scene matching algorithms using feature matching, and worked on SLAM.

Optimal Undersampling for Diffusion MRI | *Individual Research Study*

Feb 2021 – June 2021

- Conducted research on improving under-sampled MRI images using deep learning and worked on acquiring optimal under-sampling patterns for diffusion MRI to decrease MRI scan times.

SKILLS

Languages: Turkish (native), English (fluent), German (beginner)

Programming: Python, C++, MATLAB, Java, ROS, PyTorch

HONORS & AWARDS

Bilkent University Academic Excellence Award: Awarded at graduation based on CGPA

Bilkent University High Honor Rolls in 2017-2021

Bilkent University Comprehensive Scholarship: Full tuition waiver & stipend during the BSc program

KYK Scholarship of the Republic of Turkey: Awarded monthly stipend during the BSc program due to the success at university entrance exam

Nationwide University Entrance Exam: Ranked 75th among 2 million students in Turkey, 2017