HALUK ARAL HEKIMOGLU

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PUBLICATIONS

- A. Hekimoglu, M. Schmidt, A. Marcos-Ramiro, G. Rigoll. "Efficient active learning strategies for monocular 3d object detection." *IEEE Intelligent Vehicle Symposium* (Oral Presentation, 2022)
- A. Hekimoglu, P. Friedrich, W. Zimmer, M. Schmidt, A. Marcos-Ramiro, A. Knoll. "Multi-task consistency for active learning." *Proceedings of the IEEE/CVF International Conference on Computer Vision Workshops* (2023)
- A. Hekimoglu, M. Schmidt, A. Marcos-Ramiro. "Monocular 3d object detection with lidar guided semi supervised active learning." Submitted to *WACV* (2024)
- A. Hekimoglu, M. Schmidt, A. Marcos-Ramiro. "Active learning with task consistency and diversity in multi-task networks." Submitted to *WACV* (2024)
- A. Hekimoglu, A. Brucker, A. Kayali, M. Schmidt, A. Marcos-Ramiro. "Active learning for object detection with non-redundant informative sampling." Submitted to *WACV* (2024)

EXPERIENCE

Doctoral Researcher *BMW Group, Munich, Germany*   *April 2021-Present*
- Researching active learning strategies to enhance the data-efficiency of autonomous driving perception algorithms.
- Collaborating with teams to integrate research findings into the perception stack.
- Contributing to the broader scientific community through publication and presentations in top-tier conferences.
- Research Areas: Computer Vision, Deep Learning, Active Learning, 2D/3D Object Detection, Semantic Segmentation, Multi-Task Learning

Computer Vision and Machine Learning Engineer *Kuartis Technology, Ankara, Turkey*   *May 2020-March 2021*
- Worked on training and implementation of multiple autonomous driving perception models including: 2D Object Detection, Lane Detection, Point Cloud Segmentation, Perception Fusion and Depth Estimation.
- Constructed an Active Learning based pipeline consisting of data selection, training dataset creation and model training that helped engineers spend less time on data preparation processes and more on model development.
- Deployed various neural network models using TensorRT and C++ 11 for faster inference running on NVIDIA DRIVE AGX and ROS.
- Participated in design and decision-making process of full perception architecture for a self-driving car.

Computer Vision Research Intern *Kuartis Technology, Ankara, Turkey*   *Summer 2019*
- Designed a new person re-identification model to improve performance of the model in-use by +16% by proposing a part-based generator network to generate more realistic looking pedestrian images.
- Participated in entire R&D cycle: coding the network, data loading, training in a Nvidia-Docker container, conversion to a deployable TensorRT Caffe model, integrating with surveillance system in C++.

Research Intern *Computer Vision Lab ETH Zurich, Switzerland*   *Summer 2017*
- Created a user-interface plugin for MITK using C++ for medical image registration and segmentation designed for use of health-care professionals working on healthcare data in detection of deformations.
- Deployed the applications in Docker containers to eliminate environment dependency problem.

EDUCATION

Technical University Munich Munich, Germany   *April 2024*
Doctor of Engineering, Electrical and Computer Engineering
Topic: Active Learning for Self-Driving: An Intelligent Learning Strategy for Data-Efficient Development of Autonomous Driving

New York University New York, NY   *May 2020*
Master of Science, Computer Science and Engineering, GPA: 3.95
MS Thesis: Pose and Camera Invariant Person Reidentification and Attribute Recognition
Relevant Coursework: Computer Vision, Machine Learning, Artificial Intelligence, Neural Networks, Databases, Algorithms

Middle East Technical University Ankara, Turkey   *June 2018*
Bachelor of Science (High Honor), Electrical and Electronics Engineering, GPA: 3.79
Honors: Highest Academic Performance Award (2018), High Honor (2015,2016,2017,2018)

SKILLS

Coding Languages: Python, C++, MySQL, HTML, CSS, JavaScript
Frameworks and Libraries: PyTorch, TensorFlow, OpenCV, TensorRT, Keras, scikit-learn