

Haobin Tan

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Education

Karlsruhe Institute of Technology (KIT)

Karlsruhe, Germany

M.Sc. in Computer Science

Apr. 2019 - Sep. 2022

- **Specialization:** Artificial Intelligence
- **Relevant Coursework:** Machine Learning, Pattern Recognition, Computer Vision for Human-Computer Interaction, Deep Learning and Neural Networks, Deep Learning for Computer Vision, Nonlinear Optimization
- **Master Thesis:** "Real World Crowd Pose Estimation with Transformers" (Grade: 1.0/1.0, German Grading System)

Karlsruhe Institute of Technology (KIT)

Karlsruhe, Germany

B.Sc. in Computer Science

Oct. 2014 - Apr. 2019

- **Specializations:** Robotics and Automation, Software Engineering

Work Experience

abas Software GmbH

Karlsruhe, Germany

Working Student

Jun. 2018 - Jan. 2020

- Development of cloud-based Document Management System (DMS) using Polymer, Vue.js, TypeScript, JavaScript, and Amazon Web Services
- Creation of automated tests with Jest and Cypress
- Close collaboration in an internationally distributed Scrum team

Practical Experience

KIT, CV:HCI Lab

Karlsruhe, Germany

Walkable Path Discovery Utilizing Drones

Apr. 2021 - Aug. 2021

- Development of "flying guide dog" prototype for visually impaired assistance based on DJI drones and semantic segmentation using Python
- Training of segmentation models and traffic lights classification models using PyTorch
- Design of drone self-control algorithm
- Creation of "Pedestrian and Vehicle Traffic Lights (PVTL)" dataset for traffic lights recognition
- Design and organization of experiments and NASA Task Load Index (NASA-TLX) user study

KIT, Interactive Systems Lab (ISL)

Karlsruhe, Germany

Hand Gesture Recognition

Nov. 2020 - Mar. 2021

- Development of hand gesture recognition application using Python
- Building and training of neural networks using PyTorch
- Dataset preprocessing and data augmentation using Albumentations

KIT, Vision and Fusion Laboratory

Karlsruhe, Germany

Real-World Person Detection on Jetson GPU

Nov. 2020 - Feb. 2021

- Training of Single-Stage Detectors (YOLO, RetinaNet, SSD)
- Deployment of end-to-end person detection pipeline on Nvidia Jetson devices
- Performance analysis and optimization using Nvidia Nsight

Publications

Flying Guide Dog: Walkable Path Discovery for the Visually Impaired Utilizing Drones and Transformer-based Semantic Segmentation

2021 IEEE International Conference on Robotics and Biomimetics

2021

Haobin Tan, Chang Chen, Xinyu Luo, Jiaming Zhang, Constantin Seibold, Kailun Yang, Rainer Stiefelhagen

Accomplishments

2021 "AiTalents 2020" Entrepreneur Education Program, TechQuartier

Remote

2018 Winner of "Industry 4.0 & AR"-Challenge, Continental #Fiction2Science Hackathon

Mainz, Germany

Skills

Programming Python, Java, JavaScript, TypeScript, C#, C, LaTeX, Markdown, Linux

Artificial Intelligence PyTorch, MMCV, OpenCV, NumPy, Pandas, Matplotlib, Plotly

Tools VS Code, Git, Jupyter, Docker

Languages Chinese (Native), Cantonese (Native), English (Proficient), German (Proficient)