Zhijing Lu

Kaiserslautern, Germany| Female | (+49)01624771657 | jingxiaoxiahu@gmail.com | **Linkedin** | **Github**

Profile

Computer Vision Engineer with 2+ years of experience in object detection, image segmentation, face and speech recognition, and robot perception. Strong background in deep learning, unsupervised learning. Proven success in academic research and industry deployment in robotics and industrial inspection. Skilled in transforming research into practical applications.

Education

Rheinland-Pfälzische Technische Universität Kaiserslautern-Landau Oct 2021-Sep 2025
M.Sc. in Computer science Kaiserslautern, Germany

Shanghai University of Electric Power Sep 2014-June 2018
B.Sc. in Computer Science and Technology Shanghai, China

Publication

Zhijing Lu, Ashita Ashok, Karsten Berns, "RoboReID: Audio-Visual Person Re-Identification by Social Robot" 2024 10th IEEE RAS/EMBS International Conference for Biomedical Robotics and Biomechatronics (BioRob)

WEI Weimin[1], **LU Zhijing**[1], YE Yuting[2]. "Improvement and Contrast Analysis of Variants of A* Algorithm." *Journal of Shanghai University of Electric Power: Apr. 2018, Vol.34, No.2*

Master Thesis

Towards unsupervised object detection and segmentation in videos
Under Prof. Dr. Didier Stricker, DFKI | June 2024 - Sep 2025

- Refined a object detection model—CutLER under unsupervised learning and applied it to object detection and segmentation in video frames. The model's AP50 value increased by around 7%
- Made a new method— VideoCut to pre-process the video frames under unsupervised learning. This resulted in a 3% increase in the model's AP50 value.

Research Experience

Person Identification via Visual &Verbal Cues for Human-Robot Interaction
Under RRLab，TU Kaiserslautern | May 2022- Jan 2023

- Trained MobileFaceNets with CASIA-webface dateset for face recognition .
- Trained ECAPA-TDNN with CommonVoice dataset for voiceprint recognition.
- Transferred these two trained models to ONNX and applied to the humanoid robot, Emah.
- Achieved robust identification within 20 seconds

Learning-based Subgraph Matching for 3D Scene Graph
Under Prof. Dr. Didier Stricker, DFKI | May 2022- Sep 2023

- Choose to use graph to solve the matching problems in 3D scene. Finded the position of a subgraph in a Given 3D scene is the topic of this project.
- Trained encoder and decoder structure---GATv2 and Gumbel Sinkhorn with 3DSSG dataset.

Indoor Surveillance Security Robot: Design, Sensing and Control
Software engineer, Think Things Technologies PTE.LTD | Feb 2019-Dec 2019

- Implemented efficient multi-channel and distributed wireless communications for OTA updates of a multi-robot system
- Developed localization algorithm with optimization using Levenberg-Marquardt algorithm to enable transferring of large data set of the underlying computer system
- Developed IMU sensor applications aided by complementary filter and fitting ellipse for improved orientation estimation.
- Designed a new robotic database management system along with timing synchronization between MySQL and Mongodb

Autonomous Patrol in Large Photovoltaic Power System by Unmanned Aerial Vehicle Recognition
Undergraduate Researcher under Prof. Haizhou Du | Dec 2018-Oct 2019

- Applied the Dijkstra's algorithm in designing optimal path planning depending on the solar array observed on-site

- Integrated NEMA-formatted GPS data with real-time kinematic positioning for precise localization with an error less than 2m
- Designed an optimization for GPS storage management under freeRTOS to avoid system crash fault

Work Experience

German Research Center for Artificial Intelligence (DFKI)

Student Researcher | Dec 2022- Aug 2024

- Participated in product inspection project using polarized light and SAM segmentation
- Built graph-based matching modules for 3D vision tasks
- Preprocessed image datasets for real-world factory applications

Shanghai Pytes Co.,Ltd

BMS Engineer | Feb 2020-Jun 2021

- Optimized SOC algorithm and maintained the BMS software stack
- Led backend development for cloud-based BMS platform
- Oversaw product data for international deployments

THINK THINGS TECHNOLOGIES PTE.LTD.

Software Engineer | Nov 2018-Dec 2019

- Responsible for compiling the underlying program of robot
- mainly realizing imu calibration and indoor positioning algorithm

Teaching

Programming for the Mars Probe Orbits

Research Assistant under Prof. Gregory S. Tucker(Brown university) | July-Aug 2018

- Instructed students with astrophysics concepts and programming skills to simulate and calculate Mars probe orbits by Python
- Managed lab guidance and graded student assignment

Skills

Programming Language: Python, Java , C

Tools: OpenCV , pytorch, tensorflow, onnx, cuda, linux, Git, matlab

Model: CNN, GNN, TDNN, mask2former

Others: SQL , BMS