Zongyao Li

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Education

The George Washington University, School of Engineering & Applied Science — **Washington, DC**
Master of Science in Computer Science — **January 2023**
- GPA: 3.9/4.0

Liaoning Normal University — **Dalian, China**
Bachelor of Computer science and technology — **June 2019**
- GPA: 3.2/4.0

Research Interests and Main Course

- **Research: Computer Vision, Machine Learning, Drone**
- **Course:**
  - **Machine Learning 4.0/4.0**
  - **Augmented reality (AR) and Virtual Reality (VR) 4.0/4.0**

Publications

- Zhenhao Zhao; Jonathan Lee; Zongyao Li; Peng Wei, **Camera Vision based Perception for UAS Autonomous Landing,** AIAA SciTech 2023

Relevant work experience

George Washington University — **Washington, DC**
Research Assistant — **December 2021 - Present**
research content: Computer Vision, drone auto-landing
- Use computer vision models to analyze data taken by drones
- Training models on Google Colab
- Collect data to build dataset to detect the model's recognition of people and cars during landing

George Washington University — **Washington, DC**
Graduate Teaching Assistant — **July 2022 - Present**
- Collect latest VR/AR technology principles and new applications
- Maintain two classes of VR/AR devices, More than 30 devices Model in Oculus Quest 2
- Grading of homework exams and answering students' questions for nearly 60 students

Jinyu Media — **Dalian, China**
Front-end engineer — **July 2019 - April 2020**
- Created web front-end sites on cloud-based servers using only two weeks
- Chose cloud server for website, doing daily operation of server, and update website content and perform SEO on website

Research and Projects

Research Project: Machine Learning, Computer Vision for Small UAS — **December 2021 – Present**
Advisor: Professor Peng Wei
- Use computer vision to assist drone landing, use computer vision to help in drone landings, helping drones detect people and vehicles near landing pad
- Train two models RetinaNet and yolov5 with Visdrone, do Model evaluation, compare and analyze the effect of different pre-trained models
- Determine type of data needed, collect hundreds of videos taken by drones for model training, and analysis drones flight data

- Test the effect of drone images at different heights on model detection accuracy
- Deploy the model on a small mobile platform and test the results (NVIDIA Jetson Xavier)

Project One: Machine learning, computer vision to identify dog breeds **January 2022-May 2022**

- Research the impact of poorly performing datasets on model training
- Use Stanford dog dataset to distinguish 120 breeds of dog with Resnet
- Make modifications to the existing ResNet model and observe the effect of the modified model

Project Two: Front-end development, Household Goods Management System **April 2021 - June 2021**

- Created a website can across multiple platforms with uni-app framework. The website can be use on more than 5 platforms
- Develop a login user system with 4 user group permissions. Different user class different function
- Collaborate with back-end development for testing and data exchange between front and back-end, for nearly 100 API

Project Three: Infrared Active Contour Tracking of Moving Vessels **June 2018 - June 2019**

- Manage a mobile platform to support for the operation of infrared modules
- Classify image data and tag data according to the needs of model training
- Manage the connection of infrared devices to portable platforms to ensure data collection can be use outdoors

Technical skills

- **Machine learning CV:** PyTorch, Yolov5, RetinaNet, ResNet, Python
- **IDE:** Google colab, PyCharm, Jupyter Notebooks, Eclipse, IntelliJ Idea
- **Web development:** JavaScript (vue.js, uni-app), spring boot, bootstrap
- **Others:** Linux, AWS, Unity, VR/AR, Java, JavaScript, C++, Docker, Git