

JIARUN WEI

☎ +1-412-214-2316 ✉ jiarunw94@gmail.com 💻 [jiarun-wei-gemini](#) 📄 [Personal](#)

EDUCATION

- Carnegie Mellon University** 09/2020 – 05/2022
Master of Science - Mechanical Engineering Pittsburgh, PA
Courses: Deep Learning, Computer Vision, Java for Application Programmer, Machine Learning
- University of California, Berkeley** 01/2019 – 12/2019
Exchange Study - Concurrent Enrollment Berkeley, CA
Courses: Feedback Control of Legged Robots, Introduction to Control of UAV, Model Predictive Control
- Dalian University of Technology** 09/2016 – 06/2020
Bachelor of Engineering - Mechanical Engineering Dalian, CN
Courses: C Programming, Fundamentals of Controls, Digital Circuits

EXPERIENCE

- Safe AI Lab, CMU | [Demo](#)** 09/2021 – Present
Research Assistant Pittsburgh, PA
 - Developed an autonomous delivery robot with Visual and Lidar perception by **C++** and **Python** in **Linux**
 - Designed an automatic Camera-Lidar calibration algorithm using key-point correspondence approach by **C++**
 - Achieved stable localization by *FAST-LIO* algorithm with Solid State Lidar and Stereo Camera IMU in **ROS**
- Division of AI Disciplines, Beijing Kaikeba Co., Ltd** 06/2021 – 08/2021
Teaching Assistant Beijing, CN
 - Established an end to end speech recognition platform for teaching purpose based on MLP by **PyTorch**
 - Implemented the noise reduction of face images by Gaussian Filter and Bilateral Filter algorithm by **Python**
 - Constructed a self-designed comment generation system based on semantic analysis for homework grading

PROJECTS

- Monocular Depth Prediction Using Self-supervised Learning | [Project repo](#)** 04/2022 – Present
 - Built and trained a 2D image depth prediction neural network in **PyTorch** based on self-supervised learning
 - Improved the prediction stability by adjusting Graph Adjacency Matrices in Graph Convolutional Network
 - Implemented an automatic data selection and image color augmentation algorithm for **KITTI** dataset
- Webiste Development for ICRA Competition | [Website](#)** 01/2022 – 03/2022
 - Developed a deliverable website for SeasonDepth Challenge Competition using **HTML**, recorded by **ICRA**
 - Fulfilled the front end interfaces of registration, login and ranking page by customized **CSS** and **Bootstrap**
 - Deployed the website on RDS server and associated it with a domain name to evaluate the participants' models
- Zombies-Infection Game | [Project repo](#)** 10/2021 – 12/2021
 - Implemented a third person shooting game based on Object Oriented Programming by **C++** and **OpenGL**
 - Constructed super classes of virtual props with extensible methods as interfaces in convenience of inheritance
 - Optimized the texture loading time during weapon switching based on a novel pointer management algorithm
- Collision Check for Robot Arms | [Project repo](#)** 11/2020 – 12/2020
 - Designed a safety region generation approach for robot arm collision check by **Python** and **MATLAB**
 - Implemented a self-designed algorithm to solve the geometric parameters of the safety region based on SVD
 - Developed a CAD software plugin to calculate and visualize the safety region of 3D objects in arbitrary shape
- Emoji Prediction for Twitter Texts | [Project repo](#)** 10/2020 – 12/2020
 - Constructed a deep learning pipeline for emoji prediction on twitter texts based on **CNN** and **LSTM** by **Keras**
 - Applied the **Word2vec** and **GloVe** embedding algorithm to data prepossessing and feature encoding of texts
 - Conducted data cleaning and word parsing based on statistical method to get rid of the irrelevant information

SKILLS

- Languages:** C/C++, Python, Java, JavaScript, HTML, MATLAB
- Tool-kits:** PyTorch, MMCV, Wandb, Tensorboard, Numpy, Scipy, Git, Bootstrap, Latex
- Environment:** Linux, GNU GRUB, GNU Bash, ROS, Conda, Docker, CARLA