YUCHEN(ALEX) ZHENG

310-854-2057 | alexzheng1017@gmail.com | Los Angeles, CA 90025 | linkedin.com/in/alexzheng1017

EDUCATION

UNIVERSITY OF CALIFORNIA, LOS ANGELES (UCLA), Los Angeles, CA
MS in Electrical & Computer Engineering *Expected, March, 2024*
- Concentration on Signal and Systems, Machine Learning, Deep Learning

ZHEJIANG UNIVERSITY, Hangzhou, China
BEng in Automation, Minor in Innovation and Entrepreneurship *2022*
- Member of Chu Kochen Honors College
- Overall GPA 3.90/4.0, ranked top 5% among 155 students
- Awarded First Class Scholarship and Outstanding Graduates

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, MA
Online Program: Machine Learning Plus in Autonomous System *2021*
- Received A (99/100), ranked top 10 among over 150 students
- Completed cityscape semantic segmentation for autonomous driving project as the team leader

SKILLS

Programming Languages: C / C++ , Python, Java, HTML, JavaScript, SQL
Knowledge: DL / RL, ML, Optimization, Data Structure, Robotics, Embedded System
Frameworks and Software: PyTorch / TensorFlow, NumPy, Pandas, ROS, Linux, MATLAB, React

EXPERIENCE

HUZHOU RESEARCH INSTITUTE OF ZHEJIANG UNIVERSITY Huzhou, China
Robotics Engineer Internship *2022*
- Upgraded existing autonomous racing simulation system to incorporate vehicle model expressed by neural network (NN), and to simulate multiple racing cars to compare control effects (C++)
- Designed and installed new 1:10 autonomous racing car, able to move 2x faster and 5x control sensitivity (Embedded System)
- Collected raw data by manual / computer control (ROS, C++) and used data processing skills to obtain datasets available for model training and testing (Python, Pandas)
- Developed tailored feedforward / recurrent NN for vehicle dynamics learning, reduced model errors by 16% in test dataset (PyTorch)
- Applied learned vehicle dynamics (ROS, C++) and reduced tracking error by 30% compared to previously-used pure-pursuit control

ZHICHENG ZHANG, STANFORD UNIVERSITY Hangzhou, China
Research Assistant *2020*
- Studied and implemented image super-resolution method to make medical images more useful for diagnosis
- Developed tailored convolution neural network for medical image enhancement task, improved reconstruction performance by 3% compared to well-accepted SRCNN (PyTorch)
- Investigated effect of loss function—pixel loss, structure loss, perceptual loss, on image reconstruction results and explored task-oriented loss function for medical image enhancement (Python)

COMPETITIONS & PROJECTS

Team Leader: **ADVANCED EXPERIMENT OF EMBEDDED SYSTEM** *(2021)*
- Installed Jetson Nano scaled car to run 2m/s within athletic track with only onboard monocular camera as sensor (Ubuntu)
- Performed data annotation for collected image and trained ResNet-50 model to predict current location and track info (PyTorch)
- Deployed reinforcement learning to get better instant control value than using PID control, based on visual model prediction (Python)

Team member; MERITORIOUS WINNER: **2021 MATHEMATICAL CONTEST IN MODELING** *(2021)*
- Collaborated with two teammates to establish multi-phase mathematical model describing breakdown of ground litter through fungal activity in presence of multiple species and finished 24-page essay in 96 hours
- Communicated with teammates about model came up with, reached a unified opinion and divided work to achieve highest efficiency
- Researched one type of formula separately, obtained specific formula by data fitting, and compared results to find best one (MATLAB)

Team Leader; Third Prize: **"HUIYUAN SHARING" NATIONAL UNIVERSITY OPEN DATA RESEARCH COM** *(2021)*
- Collaborated with four teammates to use given library datasets and allocated work to complete essay and presentation in one month
- Visualized datasets (Matplotlib) and conducted cluster analysis on readership groups to build several user personas (scikit-learn)
- Built book recommendation system achieving over 83% accuracy using data pre-processing, collaborative filtering, deep learning (Pandas, Tensorflow)