Peicong (Alex) Weng

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EDUCATION

Northeastern University Expected 12/2024
Master of Science in Electrical and Computer Engineering Boston, MA
Notable Coursework: Assistive Robotics, DB Management System, ML and Pattern Recognition, Data Visualization

Hangzhou Dianzi University 09/2018 - 06/2022
Bachelors in Electronics Engineering Hangzhou, China
Concentration: Communication Engineering
Notable Coursework: C++ Lab, Data Structure and Algorithm, Embedded System, Signal and System, Computer Network

INDUSTRY EXPERIENCE

Multiway Robotics 01/2024 - 08/2024
Software Engineer – Intern Atlanta, US
- Read and researched on algorithms to achieve wide range of dynamic motions and athletic actions to overcome obstacles
- Deployed **Cartographer** on AGV which create indoor **OSA** map and improve navigation precision through engineering methods
- Adjust parameters to help vehicles operate robustly and precisely in complex plant (Warehouse and Prod line) environment
- Update and implemented SLAM(**Cartographer**) methods, which solve navigation accuracy problems in warehouse
- Learnt **ROS** knowledges, (including topic, node, message, service) helping improved rviz2 AGV data visualization model
- Read papers on FAST-LIO2 and ImMesh, participated in setting up demo version of new generation 3D SLAM framework
- Communicated actively with client, collaborate with developers in company, manage project site personnel

ArcSoft 05/2022 - 08/2022
Software Development Engineer in Test (Nissan Project team) – Intern | Hangzhou, China
- Spearheaded development of the system testbed to create automation results from over 300,000 pictures and videos (FVC, AVM)
- Designed 15 sets of tests cases to evaluate CV cognization accuracy under different environment (Cloudy, Rainy, Sunny, Windy)
- Created **Python** scripts to identify and tabulate results from testbeds and automatically output prediction confidence
- Curated test cases for over 13 new features and developed a test results visualization module using **Matplotlib**

Nokia 05/2021 - 09/2021
Telecom Cloud Engineer – Intern Hangzhou, China
- Designed and deployed 2 Cloud platform server clusters spanning across over 12 inter-disciplinary departments / labs
- Detected over 80 transmission errors with **Wireshark** and **SNIFFER** and successfully resolved 90% of the issues monthly
- Optimized physical layer comm-receiver algorithm (**C++**) run time by 138%, decrease RAM utilization by 31%
- Developed over 25 signal I/O functions and wrote 1400 lines **C++** code in the domain of DSP embedded software programming

HDU Optical Fiber Comm Lab 01/2020 - 06/2022
Research Assistant Hangzhou, China
- Simulated, generated and evaluated vortex light data during propagation of vortex light with **MATLAB** and **Python**
- Developed the CNN-LSTM model (Pytorch), got result of sleep stage recognition accuracy with 89%

PROJECT EXPERIENCE

Protocol Programming with C++ (Northeastern University) 01/2023 - 04/2023
- Designed and developed a two-way message/file sending program, with features like congestion control and flow control
- Implemented Cyclic Redundancy Check to examine the expressions sent by the server to client
- Generated 12 data visualization graphs from csv file, using Matplotlib in python

2019 HDU NCSIC - "Sleep Well" Sleep Stage Monitoring Pillow 04/2021 - 06/2022
- Analyzed 65 users' sleeping stage by training a custom **CNN-LSTM** ML model with prediction accuracy of **88.9%**
- Injected React into backend interfaces to monitor 21 captured sensor data, improved page loading speed by 33%
- Developed and encapsulated **C++** program to receive and fusion data received from 5 different sensors through IIC and SPI
- (results recorded in paper [*CNN-LSTM based user sleep quality monitoring method*])

The 14th NXP Cup - Electromagnetic Group (HDU) 09/2020 - 11/2020
- Developed and encapsulated peak signal filter functions to improve signal quality read from 10mH inductances
- Debugged PID vehicle control algorithm parameters to achieve optimal vehicle running results
- Wrote **C++** codes to accurately control the performance of MG996R steering gear during different speeds through PWM

TECHNICAL SKILLSS

- **Language:** C++, Python, SQL, HTML5, CSS
- **Tool:** Git, Power shell, Visual Studio, PyCharm, Anaconda, MySQL, Mongo DB, Matlab, Wireshark, Keil5