

Zijian HE

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University of California San Diego, 9500 Gilman Dr, La Jolla

OBJECTIVES

A highly motivated student seeking for the internship opportunity that allows to possess a strong set of skills and a creative mindset to become an expert with theoretical knowledge and practical experience.

EDUCATION

University of California, San Diego

La Jolla, US

Master of Science in Electrical and Computer Engineering (Signal and Image Processing)

Sept 2021 – June 2023

Relevant Courseworks: Digital Image Processing (Hough transform, Fully Convolutional Network), Computer Vision (photometric stereo, image classification), Probability and Statistics for Data Science, Computational Evolutionary Biology

The Hong Kong Polytechnic University (PolyU)

Hong Kong

Bachelor of Engineering in Electrical Engineering

Aug 2016 – June 2020

Awards & Honors: Faculty of Engineering Dean's List (2017, 2018)

Relevant Courseworks: Optical Fiber Systems, Linear Systems and Signal Processing, Analogue and Digital Circuits, Applied Electromagnetics, Power Systems, Computer System Principles, Computer Programming

Cardiff University, Exchange Program

Cardiff, UK

Relevant Courseworks: Power Electronics, Automatic Control, HF and RF Engineering

Sept 2018 – Jan 2019

EXPERIENCE

Department of Computing, PolyU, Research Assistant, Supervisor: Prof. Song GUO

Nov 2020 – July 2021

- Formulated the broadcast strategy with Upper Confidence Bound method for a Semi-Asynchronous Federated Learning algorithm.
- Performed the real-time 3D arm skeleton tracking based on the Kalman filter as well as Hidden Markov Model with the data from IMU and the Microsoft Kinect.
- Constructed a network with Raspberry Pi and RF module with the proposed MAC protocol and performed the domain adaptation on the wireless network configurations according to the MATLAB simulations.

Probability and Statistics course project, Team Member

Nov 2021 – Dec 2021

- Data processing of SWITRS dataset with SQLite and pandas.
- Analyzed each attribute of the dataset with covariance & importance ranking and predicted traffic accident severity with classification.

Polarization demultiplexing for optical communication systems, Final Year

Aug 2019 – May 2020

Project, Supervisor: Prof. Alan Pak Tao LAU

- Digital modulation of various phase-shift keying signal formats for optical communication.
- Simulated attenuation and Polarization Mode Dispersion of encoded signal during transmission.
- Demodulation and compensation by the proposed dynamic-channel equalization method at the receiving end.

COMAP Mathematical Contest in Modeling, Prediction of language speakers, Team Leader

Jan 2018 – Feb 2018

- Language data collection from the World Bank with Python and mathematical model building.
- Prediction and decision making by analytic hierarchy process and nonlinear programming with MATLAB.

Thales Project Arduino Competition, Team member

Jan 2018 – Feb 2018

- Designed the mechanical structure and functionality of a smart car with sensors and a web camera.
- Purpose and applied the self-adaptive algorithm for autonomous patrol function to the smart car.

Freshman Project Competition, PolyU, Task B, Team Leader, 1st Runner Up

Sept 2016 – Dec 2016

- Designed the robotic arm controlled by Arduino and servo motors.
- Color detection of objects with OpenCV and web camera.

INTERNSHIP

Ooredoo Oman, Quality Assurance Team

June 2018 – Aug 2018

- Controlled the quality of Base Transceiver Station (BTS) in terms of installation and configuration, including telecom and power equipment, by series of standard operating procedures of inspections and testing.
- Monitored working conditions of BTS with the SCADA system and communicated with the headquarter as well as the data center.

SKILLS

Programming Languages: C++, C, MATLAB, Arduino, Python (Numpy, PyTorch, Pandas, Matplotlib), Java, SQL, shell script

Applications: COMSOL, ADS, AutoCAD, SolidWorks, Visual Studio, ANSYS Maxwell, Microsoft office

Other skills: version control with Git, Linux

PUBLICATIONS

1. HUANG, D., Li, F., **Zijian, H. E.**, Cheng, Z., Chao, S., & Wai, P. K. (2020). 400 MHz ultrafast optical coherence tomography. *Opt. Express*, 18, 14685.
2. Ouyang, X., Liu, T., Zhang, Y., He, J., **He, Z.**, Zhang, A. P., & Tam, H. Y. (2020). Ultrasensitive optofluidic enzyme-linked immunosorbent assay by on-chip integrated polymer whispering-gallery-mode microlaser sensors. *Lab on a Chip*.
3. Xiang, Z., Wan, L., Gong, Z., Zhou, Z., Ma, Z., OuYang, X., **He, Z.**, & Chan, C. C. (2019). Multifunctional Textile Platform for Fiber Optic Wearable Temperature-Monitoring Application. *Micromachines*, 10(12), 866.