Robin (Zihao) Lin

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EDUCATION

Cornell University, *Ithaca, NY*
Bachelor of Science in Electrical and Computer Engineering, Minor in Computer Science *Aug. 2019 – May. 2022*
GPA: 3.94, Dean's List, Tau Beta Pi
CS/ML/Robotics Coursework: OOP and Data Structures, Algorithms, Discrete Structures, Functional Programming, Introduction to Machine Learning, Autonomous Mobile Robotics
EE Coursework: Digital Logic, Computer Organization, Embedded Systems, Circuit Analysis, Microelectronics, Signals and Information, Mathematics of Signal and System Analysis

SKILLS

Languages: C/C++, Python, Java, JavaScript, Swift, OCaml, MATLAB
Web Development: HTML/CSS, React.js, Node.js
Machine Learning: PyTorch, Tensorflow, Scikit-learn, OpenCV

EXPERIENCE

Cornell University - Autonomous Systems Lab
Research Intern *Feb. 2021 – Present.*
- Training and benchmarking Pyramid Stereo Matching Network on Argoverse tracking datasets.
- Developing pre-processing scripts for stereo camera disparity regression and point cloud to disparity transformations.

Uber - Advanced Technologies Group (ATG)
Development Test Engineering Intern *June. 2020 – Aug. 2020*
- Developed an SDV Data Collection Analysis automation tool in Python.
- Implemented GraphQL schemas to extract metadata from mission specialists during road data collections.
- Developed a search algorithm for metadata properties on 10,000+ data collection logs.
- Implemented Google Sheets API for automated spreadsheet reporting of metadata occurrences.
- Reduced data analysis time from 4 hours to 10 minutes.

University of Toronto - Helmy Group
Research Intern *May. 2019 – Aug. 2019*
- Derived a pseudo-spectral numerical scheme (Split-step Fourier Method) for solving the Coupled Nonlinear Schrödinger Equations.
- Developed a numerical gain solver algorithm for the Four-Wave Mixing (FWM) optical process in semiconductor devices in MATLAB.

York University - Sherman Health Sciences Research Center
Research Intern *May. 2017 – Aug. 2017*
- Developed an embedded foot-mounted inertial navigation device for localization without the use of GPS.
- Developed sensor acquisition and fusion scripts for dead reckoning and pose estimation in C++.
- Designed and integrated on-board circuitry for Bluetooth, magnetometer, accelerometer, and gyroscope modules.

PROJECTS

iOS Memory Card Game
Github Repository *December. 2020 – Jan. 2021*
- Built an emoji memory matching card game on the iOS platform using Swift.
- Developed user interface using SwiftUI, leveraging the Model-view-viewmodel (MVVM) architectural pattern.

Genetic Algorithm Approach to the Iterated Prisoner's Dilemma
Github Repository *November. 2020 – Jan. 2021*
- Designed and developed an Iterated Prisoner's Dilemma simulation using Python and SQLite.
- Evaluated the effects of varying evolution parameters including the number of generations, population size, strategy gene length, fitness function, and growth rate.
- Implemented seven base strategies including Tit-for-Tat, Pavlov, and GRIM.

Over-the-Air Deep Learning Based Radio Signal Classification
Github Repository *April. 2020 – May. 2020*
- Developed a convolutional neural network (CNN) classification model for classifying modulation schemes of radio communication signals using PyTorch and Scikit-learn.
- Tuned hyperparameters including learning rate, optimizers, network architecture, L2 regularization, and batch normalization.
- Achieved an overall training accuracy of 92% and a testing accuracy of 45%.

ChatUp
Github Repository *August. 2019 – Sept. 2019*
- Developed a real-time, bidirectional event-based chat web application using Node.js and Socket.io.
- Built front-end UI using HTML/CSS and Bootstrap.