Zihao Zou

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Educational Background

University of California-Irvine — **Irvine, CA**
College of Engineering, B. S. in Computer Engineering — June 2021

Washington University at St. Louis — **St. Louis, MO**
McKelvey School of Engineering, M. S. in Computer Science — Expected June 2023

Skills

Languages: Chinese (Native Speaker), English
Programming Skills: Machine Learning (Pytorch,Matlab,Numpy), C/C++, Embedding Development, Golang
Knowledge Backbone: Neural Network, Supervised Learning, K-means Clustering, Image Classification&Detection
Coursework: Introduction to Artificial Intelligence, Introduction to Machine Learning(Coursera), Convolutional Neural Network(Coursera), Embedded System Development

Project Experience

Pytorch implement of YOLO v1(DEVELOPING) — June 2021 - July 2021
- Deploy a "nano" version of YOLO v1 object detection model on the jetson nano. Set up the model using vgg11 as backbone and the training routine. Collect data from "Imagenet".
- GitRepo: https://github.com/zihaozou/my_yolov1

Matlab Implementation of Lenet-5 from scratch — June 2021 - July 2021
- Implemented a Lenet 5 object classification model on Matlab based on the original paper. With no aid from third-party library, purely relying on matrix operation, constructed the model architecture, formed the forward propagation and backward propagation workflow, and created a "Adam" optimizer.
- GitRepo: https://github.com/zihaozou/Lenet-5

RISC-V Processor — March 2019 - May 2019
- Developed a full data path pipelining RISC-V processor by utilizing System Verilog (including pipeline data & control path, forwarding detection and hazard detection), and deployed on a FPGA.

Project: Agricultural Irrigation System — March 2019 - May 2019
- Designed and Established an Agricultural Irrigation System that automatically irrigated based on the temperature and humidity from the local weather station and built-in sensors, by utilizing Raspberry Pi and Python

Work Experience

Embedded System Engineer Intern, Techphant — **Guangzhou, China**
Manager: Fengming Ma — October 2020 - May 2021
- Developed sensor network on STM32 with the aid of RTOS called "RT-Thread"
- Implemented a time synchronization protocol utilizing the technique of "Flooding Time Sync Protocol"
- Implemented a data differencing technique called "VCDIFF" in order to minimize the package for updating the sensor network firmware.
- GitRepo: https://github.com/zihaozou/Delta

Research Experience

Memory and Computationally Efficient Deep Learning — **Computational Imaging Group at WashU, Saint Louis, MO**
Principal Investigator: Dr. Ulugbek S. Kamilov — November 2021 - Present
- Explore new strategies for enabling memory and computationally efficient DL in the context of computational imaging.

Laser Speckle Contrast Imaging with mobile phone camera — **HERO Lab at UCI, Irvine, CA**
Principal Investigator: Dr. Cao Huang — April 2020 - September 2020
- Collaborated with team members to design and test the system and served as the team leader
- Developed the circuit of this system by using the PSPICE simulation software.
- Programmed MSP430 microprocessor and Android mobile app for this system.

Development of Arm Band for Blood Pressure Measurement — **HERO Lab at UCI, Irvine, CA**
Principal Investigator: Dr. Cao Huang — June 2019 - March 2020
- Coordinated four student team members to complete the entire development lifecycle for an armband capable of monitoring human blood pressure.
- Completed software engineering of SPI communication and Bluetooth Low Energy using ADS1292 and Python to enable transmission of blood pressure data to a custom Android application