Xiao Xia

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Educations

University of California, San Diego Sept 2021 - Present
– M.S. in Computer Engineering

Fudan University Sept 2016 – Jun 2020
– B.Eng. in Microelectronics

Tests & Awards

TOEFL: 100 (Speaking: 24)
GRE: 322

Awards:
– 2018 Intel Cup Undergraduate Electronic Design Contest - Embedded System Design Invitational Contest 3^{rd} place
– 2018 Fudan Ascendas Cup (1^{st} place)
– 2018 Fudan University Innovation and Entrepreneurship Competition 3^{rd} place

Professional Experience

Unity Distribution Portal - https://distribute.dashboard.unity.com/
Unity Technology | Software Development Engineer Intern May 2021 – Aug 2021
Advisor: *Yi Lin, Senior Software Development Engineer*
– Developed some front-end web pages written in React.
– Implemented several back-end GraphQL APIs in Golang.
– Integrated the UDP website with OneTrust Cookie Compliance.
– Replace the Support Form of the website with the Zendesk Support Form.

Apache MXNet, Apache TVM and Meta
Amazon Web Service | Software Development Engineer Intern Jun 2020 – May 2021
Advisor: *Yizhi Liu, Senior Software Development Engineer and Apache TVM PMC member*
– Developed Cython and Ctype FFI (Foreign Function Interface) for MXNet Ops (Operators).
– Implemented dozens of Meta Ops and complemented their test cases with TVM.
– Utilized several Meta type functions for inferring the type and shape of Ops.
– Developed Meta IR Passes to bring the Bring Your Own Codegen (BYOC) feature into Meta.
– Implemented BERT Model Module and ResNet Model using the Ops provided by Meta and benchmarked these deep learning models.

Website for PV Monitoring System
Suzhou Radiant Photovoltaic Technology Co. | Software Development Engineer Intern Sept 2019 – Jan 2020
Advisor: *Teng Cao, Senior Data Scientist*
– Employed Hibernate and JPA to access Firebird database, AJAX (Asynchronous JavaScript and XML) to asynchronously transform JSON data between frontend and backend.
– Utilized Spring Framework to realize data queries and build backend services.
– Developed frontend template constructed with Thymeleaf and visualized data using ECharts.

Research Experience

An Optimization System for the Cleaning Frequency for Photovoltaic Station
Fudan University | Research Assistant Sept 2018 – Jun 2020
Advisor: *Wenzhong Bao, professor at School of Microelectronics, Fudan University*

- Designed a system using sensors and database to collect the power, radiation, and temperature data of the PV (Photovoltaic) station.
- Built mathematical model describing the negative influence of dust accumulation and panel aging on the power generation of PV panels.
- Predicted future power of the PV panel based on RNN model.
- Determined appropriate cleaning frequency for PV stations using results obtained.
- Estimated the improvement of power generation by applying the Optimization System to the data collected from real test PV panels located in Suzhou, Jiangsu, China.

Cache Miss Address Prediction Using Neural Network
University of South California | Research Assistant Jul 2019 – Sept 2019
Advisor: *Paul Bogdan, Associate Professor at the Department of Electrical and Computer Engineering, USC*

- Obtained cache miss addresses, program counters (PCs), and memory accessing traces of different instruction cache sizes, data cache sizes, and level two cache sizes using gem5 and pin tools.
- Created a pool of cache miss addresses for training and predicting to reduce the time and calculation cost of using an ultra-large address space set.
- Built a two-layer LSTM network using PyTorch to predict the cache miss addresses given by pin tools and gem5, which obtained a high accuracy of 98.8%.
- Analyzed the relationship between the hit rate and cache size.

A Fault Detection Systems for PV System
Fudan University | Research Assistant Sept 2018 – Dec 2018
Advisor: *Wenzhong Bao, professor at School of Microelectronics, Fudan University*

- Completed a fault detection system to monitor the PV plants and alert if the plant is broken or sheltered.
- Employed MongoDB to process the data of the PV system and the PyMongo package to query and process the data.
- Built a model to characterize the power generation of PV plane using MATLAB and the PLS Regression algorithm.

Autonomous Wireless Charging System for UAVs (Unmanned aerial vehicle)
Fudan University | Research Assistant Jul 2017 – Sept 2018
Advisor: *Hui Feng, associate professor at School of Information Science and Technology, Fudan University*

- Designed an outstanding system for UAVs to charge automatically.
- Constructed the drone and added hardware modules such as sonar, optical flow, and raspberry pi.
- Implemented the OpenCV package and PID algorithm to auto-land the drone.
- Tested the drone landing system and tuned the parameters to limit the landing error range to 20 cm.
- Employed optical flow module to improve the indoor stability of the whole system without the help of the GPS Module.

Professional Skills

- **Programming Languages**: C, MATLAB, Python, Cpp, Verilog, Java, SQL, Golang
- **Computer Skills**: Linux, Mission Planner, OpenCV, MongoDB, VMware, Gem5, Pin tools, Firebird Database, JDBC, JSP, XML, JSON, ECharts, Thymeleaf, LaTeX, AJAX, Markdown, HTML, CSS, Spring, TVM, React
- **EDA Tools**: Cadence, Quartus II, Modism