

# Xiao Xia

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## Educations

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**University of California, San Diego**

Sept 2021

- M.S. in Computer Engineering

**Fudan University**

Sept 2016 – Jun 2020

- B.Eng. in Microelectronics

## Tests & Awards

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**TOEFL:** 100 (Speaking: 24)

**GRE:** 322

### Awards:

- 2018 Intel Cup Undergraduate Electronic Design Contest - Embedded System Design Invitational Contest 3<sup>rd</sup> place
- 2018 Fudan Ascendas Cup (1<sup>st</sup> place)
- 2018 Fudan University Innovation and Entrepreneurship Competition 3<sup>rd</sup> place

## Professional Experience

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**Unity Distribution Portal** - <https://distribute.dashboard.unity.com/>

Unity Technology | Software Development Engineer Intern

May 2021 – Present

Advisor: *Yi Lin, Senior Software Development Engineer*

- Developed some front end web page written in React.
- Implemented several back end GraphQL API in Golang.
- Integrated the UDP website with OneTrust Cookie Compliance.

### 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

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### 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

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- **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