

Xiao Xia

Email: xxia.200051@gmail.com | Tel: (858)539-3552 | Web: <https://xiaoxia42.github.io/>
LinkedIn: <https://www.linkedin.com/in/xiao-xia-4b8a471a6/> | Github: <https://github.com/xiaoxia42>

Educations

University of California, San Diego – M.S. in Computer Engineering, GPA 3.97/4.0	Sept 2021 - Mar 2022
Fudan University – B.Eng. in Microelectronics	Sept 2016 – Jun 2020

Technical Skills

- **Programming Languages:** C, Python, C++, Java, Golang, JavaScript, TypeScript, CUDA
- **Tech Stacks:** React, SQL, MongoDB, TVM, Linux, Docker, Spring, MATLAB, Verilog, Mission Planner, PyTorch, PostgreSQL, OpenAPI, Kubernetes, Garden, LXD, AVX, SSE, MPI

Experience

Tesla Inc, Software Development Engineer Intern Product: Tesla CSSP (Cloud Self-Service Portal) <ul style="list-style-type: none">– Independently developed and deployed the disk management system which will be used by 57,000 employees of Tesla.– Developed seven front-end web modules and pages written in React, which include the modules of add/delete extra disks in the instance creation page and disk management pages.– Implemented eight back-end APIs in Golang, which include publishing and receiving jobs from RabbitMQ, querying and persisting data into the PostgreSQL database, and managing virtual machines on the LXD cluster.– Optimized the <i>instance_disk</i> PostgreSQL table with many duplicate recordings into <i>project_disk</i>, <i>instance_disk</i>, and <i>instance_node</i> tables to decouple the database operations and reduce the server load by about 5%.	Jun 2022 – Aug 2022
Unity Technology, Software Development Engineer Intern Product: Unity Distribution Portal: https://distribute.dashboard.unity.com/ <ul style="list-style-type: none">– Developed front-end web modules written in React to help create the game distribution plan, which will benefit the game developers to publish their games more manageably to stores with about one billion+ mobile gamers.– Developed back-end GraphQL APIs in Golang to help game developers publish their games to the Samsung Galaxy Store and Huawei store and get the published result from the store using the callback APIs.– Integrated the UDP website with the APIs provided by OneTrust Cookie Compliance.– Upgraded the Support Form by integrating the Zendesk Support Form into the website.	May 2021 – Aug 2021
Amazon Web Service, Software Development Engineer Intern Product: TVM: https://github.com/apache/tvm RAF: https://github.com/aws-labs/raf <ul style="list-style-type: none">– Developed Cython and Ctype FFI (Foreign Function Interface) for MXNet Ops (Operators).– Implemented dozens of RAF Ops, complemented their test cases with TVM, and developed several RAF type functions for inferring the type and shape of Ops.– Developed RAF IR Passes to bring the Bring Your Own Codegen (BYOC) feature into RAF, making the compiler more scalable for self-defined languages.– Implemented BERT Model Module and ResNet Model using the Ops provided by RAF and benchmarked these deep learning models to improve the functionality of RAF.	Jun 2020 – May 2021

Projects

Parallel Computation, UC San Diego <ul style="list-style-type: none">– Implementing the DGEMM algorithm, memory packing, kernel size tuning, vectorization, and loop unrolling improved the Peak Gflops of 1024x1024 matrix multiply from 0.014 Gflops to 21.44 Gflops on AWS t2.micro instance.– Using CUDA implemented the CUTLASS algorithm, memory coalescing, shared memory allocation, kernel size tuning, and pointer aliasing optimization increased the Peak Gflops of a 1024x1024 matrix multiply from 0.014 Gflops to 916.47 Gflops on an AWS p2.xlarge instance with a K80 GPU.– Paralleled the computation of n=8000, i=8000 Aliev-Panfilov cardiac simulation using MPI and implemented loop fusion, separate initialization improved the computation performance from 11.5 to 2085 Gflops on SDSC's 384 core supercomputer.	March 2022 – Jun 2022
--	-----------------------

Awards

- 2018 Intel Cup Undergraduate Electronic Design Contest - Embedded System Design Invitational Contest 3rd place
- 2018 Fudan Ascendas Cup (1st place)