

Botong Ou

bou@purdue.edu | 765-586-0756 | [Personal Website](#) | [Github](#) | [Linkedin](#)

EDUCATION

Purdue University - Main Campus <i>Master's degree in Computer Information Technology</i>	Sept. 2021 - Dec. 2023
University of California, Los Angeles (UCLA) <i>Master's degree in Computer Science</i>	Sept. 2019 - May. 2021
Shanghai Jiao Tong University (SJTU) <i>Bachelor's degree in Computer Science</i>	Sept. 2015 - May. 2019

SKILLS

Programming Languages	Java, Python, C/C++, Golang, JavaScript, Rust, Julia, R
Frameworks	Django, Nginx, Buildkit, Redis, Docker, Kubernetes, jQuery, SpringBoot, MongoDB
Features	Full Stack Development, MLOps, Deep Learning, OOP, Cloud Computing

WORK EXPERIENCE

Tensorchord (Startup) - Remote <i>Software Engineer Intern</i>	Dec. 2022 - Mar. 2023
--	-----------------------

- Developed container-based **MLOps** - [Envd](#) with integrated support of multiple languages and ML frameworks.
- Developed Features
 - * Designed CLIs for users to provision ML environments in **Python/Julia/R** without manually adding dependencies.
 - * Adopted remote and local caching to accelerate the build time by **4x** faster for customized ML environments.
 - * Integrated with Kubernetes for distributing ML workloads with autonomous network configurations.
 - * Introduced continuous integration and delivery (CI/CD) to facilitate the testing and deployment for Envd.
- Envd has received **~1400** stars in MLOps community and obtained **>500** users till the end of 2022.

RSSys - Purdue University <i>Research Assistant</i>	Sept. 2021 - May. 2022
---	------------------------

- Proposed the state-of-art Confidential Virtual Machine (**CVM**) architecture against untrusted cloud infrastructure.
- Developed Features
 - * Designed **Slab** memory allocation algorithm for **Library OS** to reduce memory fragmentation.
 - * Developed an audit log system monitor to store **~1G** system logs information in a reserved memory region.
 - * Supported various runtime for applications including Redis, Nginx and OpenSSL with **10% - 15%** overhead.
- The work is currently under the second-round review of **ASPLOS 2023** top system conference.

NESL - University of California, Los Angeles <i>Research Assistant</i>	Sept. 2019 - May. 2021
--	------------------------

- Designed the first edge system that provides fast deep learning inference for mobile and IoT devices.
- Developed Features
 - * Deployed **MongoDB** database on edge device to collect data generated locally at the speed of 20G daily.
 - * Leveraged Google's **OpenThread** network protocol to allow **AD-HOC** communication between cloud containers.
 - * Allows **>500** containers to transmit data between each other with only **~80ms** latency introduced.
 - * Supported multiple modern ML/DL models to run on the edge devices with **~5%** performance overhead.
- The work is accepted by [IoTDL 2021](#) top IoT conference and has been downloaded by **>400** people.

OTHER PROJECTS

Blog Posting Platform Individual Project <i>Project Leader</i>	Aug. 2021 - Feb. 2022
--	-----------------------

- Adopted **Django** to construct the web server for summarizing news and topics collected daily from CNN/FOX news.
- Utilized **React.js** to construct web pages and display the articles stored on the server with RESTful APIs request.
- Optimized the backend server with **jQuery** to achieve **AJAX** communication for users to retrieve article comments without refreshing the whole page. This increases the response time from server by **~45%**.
- Introduced **OAuth2.0** authorization to allow third-party users to log in using WeChat token to access private articles.