

Botong Ou

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

EDUCATION

Purdue University - Main Campus <i>Master of Technology in Computer Information Technology</i> GPA:3.90/4.00	Sept. 2021 - Jan. 2024
University of California, Los Angeles (UCLA) <i>Master of Science in Computer Science</i> GPA:3.83/4.00	Sept. 2019 - May. 2021
Shanghai Jiao Tong University (Top 4 in China) <i>Bachelor of Science in Computer Science</i> GPA:3.91/4.00	Sept. 2015 - May. 2019

SKILLS

Programming Languages	Java, Python, C/C++, Golang, JavaScript, HTML, CSS
Frameworks	Django, Nginx, Redis, React, Express, MongoDB, Kubernetes, jQuery, SpringBoot, Flask, Angular
Features	Backend Frontend Full-stack Development, Database, OOP, Cloud Computing, Deep Learning

WORK EXPERIENCE

RSSys – West Lafayette, Indiana <i>Research Assistant</i>	Sept. 2021 - Mar. 2022
---	------------------------

- Proposed the state-of-art Confidential Virtual Machine (CVM) architecture against untrusted cloud infrastructure.
- Feature Development
 - Designed **Slab** memory allocation algorithm for **Library OS** to reduce memory fragmentation.
 - Introduced dual-factor domains to support running applications synchronously at different privilege level.
 - Developed an audit log system monitor to store ~1G system logs information in a reserved memory region.
 - Incorporated with **Publish/Subscribe** message model to receive peripheral computation resources updates.
 - Supported various runtime for applications including **Redis**, **Nginx** and **OpenSSL** with 10% - 15% overhead.
- A paper is submitted to **ASPLOS 2023** top system conference for reviewing.

NESL – Los Angeles, California <i>Research Assistant</i>	May. 2020 - Sept. 2020
--	------------------------

- Designed the first edge system that provides secure deep learning inference for mobile and IoT devices.
- Feature Development
 - Deployed **MongoDB** database on edge device to collect data generated locally at the speed of 20G daily.
 - Constructed a centralized broker using **Kubernetes** and deploy it on **AWS ECS** to connect edge mobile device.
 - Leveraged Google's **OpenThread** network library 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.
- A paper is accepted by [IoTDI 2021](#) top IoT conference and has been downloaded by >400 people.

PROFESSIONAL EXPERIENCE

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.
- Utilized **React.js** to construct web pages to 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.

Online Instant Messaging Platform Individual Project <i>Project Leader</i>	Jan. 2021 - Jun. 2021
--	-----------------------

- Employed **Firestore** and **React.js** to construct an online instant messaging platform for users to send messages.
- Leveraged **WebSocket** protocol to support long-term connection and reduce redundant HTTP requests by 90%.
- Integrated **WebRTC** with **Firestore** to allow real-time peer-to-peer video chatting between users with ~10ms latency.
- Cooperated with **Docker** container to hold message histories in the cloud for accessing from different locations.