Ziliang(Johnson) Zhang

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Objective

Seeking an Internship Position in System Engineer or Embedded Software Engineer

Education

Doctor of Philosophy (On-Going), Electrical and Computer Engineering Sep 2022 - Present
University of California, Riverside (Core Class: Advanced OS, Real-Time/Embedded System, Autonomous System)
Master of Science, Computer Engineering Sep 2019 - Mar 2021
University of California, Riverside (Core Class: VLSI Circuits, Data Center/Comp. Architecture, Artificial Intelligence)
Bachelor of Science , Cognitive Science Specialization in Human-Computer Interaction Aug 2015 - Mar 2019
University of California, San Diego (Core Class: HCI Design, Neuroscience, Machine Learning, OOP, Data Structure)

Professional Experience

PhD Researcher @ Real-Time Embedded and Networked System, UC Riverside Sep 2022 - Present
- Created **Microcontroller** related research with **Real-Time Scheduling**, **DeepL**, **Embedded Software** and **RTOS**
- Worked on **Embedded C/C++** to write **Linux** Kernel and **Device Driver**. Designed **Preemptive Multi-Tasking** Sys.
- Designed **Soft/Hard Deadline RTS** with extreme hardware constraints. Explored I**ntermittent Execution** with **NAS**

Full-Stack Software Development Engineer @ Verizon & Marlabs, LLC Jul 2022 - Sep 2022
- Developed and Maintained **RESTful API** in **Spring Framework** and **Maven** Project, with **AWS** and **Apache Kafka**
- Worked on **system framework & infrastructure** in 5GBI team. Experienced **Embedded System** like **IoT** Gateways
- Experienced in **Junit**, **Jenkins**, **Postman** and **JIRA** for Testing, Used **Git**, **Docker** as **CI/CD** process for **TDD**
- Followed **SDLC** in **Agile/Scrum** and **Waterfall** methodologies. Familiar with **Pair** and **Extreme Programming**

Lab Researcher @ Extreme Storage & Computer Architecture Laboratory, UC Riverside Sep 2020 - Apr 2021
- Designed and Deployed **SoC** Prototype. Modified **linux header** and **driver** in video and streaming (**V4L2/FFMPEG**)
- L**atency** optimized to **2X performance**. Teleconferencing+Pose Estimation multitask **schedulable** on **Edge Device**

Project and Publication

Xv6 Project @ UC Riverside Sep 2022 - Present
- Implemented System Calls in **kernel** of Xv6 for **RISC-V** architecture using **QEMU** emulator. Designed different OS **scheduler** and **locking** mechanism. Improved overall **performance** by 3X with **Virtual Mem**. Programmed **ANSI C**

OpenRPT @ Extreme Storage & Computer Architecture Laboratory, UC Riverside Sep 2020 - Mar 2021
- Solo Dev **HCI** prototype with **Coral DevBoard** and Wearable Display. Conducted **Pose Estimation** with tele-conferencing software. Developed **Cython** within **1GB RAM** and **Edge TPU** Limit. Designed and Deployed **TFLite**
- **Latency Optimization** from **USB**, **TCP/IP**, **UDP**. Used **Bluetooth PAN** to Achieve One-step Setup and Operation

"On Construction and Application of High-Definition(HD) Maps" @ UC Riverside Sep 2020 - Jan 2021
- Co-authored and edited **HD Maps** collections. Overviewed topics in **Autonomous Driving**, Localization, Modeling, Path Planning, Perception and ATVs. Reviewed **Real-Time Perception and Inference**. Venue Submitted SSTD'21

Honors and Awards

Dean's Distinguished Fellowship Award, UC Riverside Fall 2022
Honorable Project awarded by Dr. Amr Magdy, UC Riverside Winter 2020
Provost Honor, UC San Diego Fall 2018 / Fall 2016

Technical Skills

Programming Language: C/C++, Java 8/11, Python 2/3, Shell Script, Embedded C, CUDA C, SQL, AvX, MATLAB;
OS: Linux/UNIX, Embedded Linux, Xv6, Header & Kernel, Mendel/Debian Linux **Protocols**: I2C, USB, UART, SPI;
Hardware: SoC, MCU, Intermittent Device, RISC-V, ARM, Edge Device, Bluetooth, GPU, Coral DevBoard, Arduino;
Embedded System: Schedulability Analysis, Embedded Software, Multi-Task System, Distributed System
Real-Time System: Real-Time OS (RTOS), Real-Time Scheduling, Autonomous Driving, Real-Time Inferencing/ML
ML/DL: Pandas, Matplotlib, Scikit-learn, Tensorflow, PyTorch, OpenCV, CNN/DNN, Neural Arch Search (NAS);
SDE: Spring MVC, Spring Boot, Spring Cloud, Hibernate, Spring Security, Struts, Kubernetes, HTTP, Restful API;
Cloud&Network: AWS IAM, EC2, S3, Google Infrastructure, Apache Tomcat, Glassfish, JBoss, Nginx, TCP/IP, UDP;
Dev Tools: GIT, SVN, Docker, VMware, JIRA, Log4j, Kibana **Testing**: Junit 4/5, Mockito 3, SoapUI 5, Postman;