Kefan Xu

+1 (858) 518-4216 | kefan_xu@outlook.com

EDUCATION

University of California, San Diego (UCSD), Jacobs Engineering School **La Jolla, US**
MS in Electrical & Computer Engineering(Machine Learning &Data Science Track) **Sept 2024 - June 2026(Expected)**

Zhejiang University (ZJU), Chu Kochen Honors College **Hangzhou, China**
BEng in Energy & Environment Systems Engineering **Sept 2020 - June 2024**

- Member of Undergraduate Honors Program (Selectivity: 400/6000), Chu Kochen Honors College
- Cumulative GPA: 3.75/4.0 (85.27/100); **3rd Year GPA: 3.97/4.0 (88.83/100)**
- Core Courses: Mathematical Analysis, Linear Algebra, Probability and Statistics, Discrete Math, Data Structure and Algorithm Analysis, Database Systems, Computer Organization and Architecture, Object-Oriented Programming, Computer Networks, AI, Operating Systems, Java Application Design

TECHNICAL SKILLS

- **Programming Languages:** Python, C, C++, Java, Verilog, SQL, MATLAB, Assembly,
- **Framework & Tools:** PyTorch, Flask, Docker, Kubernetes, Meson, Git/Gerrit, Shell, Makefile, GDB, Helm,
- **Database & Operating Systems:** MySQL, Linux/Unix, Redis

PROFESSIONAL EXPERIENCE

Automation and Robustness Improvement of Automated Acceptance Test Load Test **Shanghai, China**
Intern Software Developer, BCSS CNE PDU PC DG CCC&A Aut Dallas at **Ericsson** Aug 2023 - Dec 2023

- **Developed and optimized automation tools** for formula regression in Python within the traffic model trainer component of the Automated Acceptance Test Load System (AAT-LT). Collaborated with senior developers during the design phase, applying principles of modular design and object-oriented programming to ensure scalability, maintainability, and ease of integration with other system components. Streamlined the management of diverse formula types, and resolved formula regression errors, improving overall system efficiency and accuracy.
- **Independently executed data analysis leveraging Pandas and NumPy** to automate load test adapter closure. Collaborated cross-functionally to standardize data formats, which led to **a 25% reduction in formula training and product testing time** by enhancing data agreement protocols and design.
- Contributed to the **design, development, and unit tests** of the AAT-LT system. Fixed 3 bugs in the adapter component of ATT_LT, Gained experience in thoroughly testing edge cases and potential failures before deployment.
- Prepared a prototype to integrate LitmusChaos into AAT-LT by introducing faults like node failures, pod terminations, and network disruptions. Improved PCC/PCG robustness testing on kubernetes-based 5GC micro-service., Developed expertise in **cloud-native architectures and container orchestration.**

RESEARCH EXPERIENCE

Ground-based Cloud Image Segmentation Research Based on U-Net **Hangzhou, China**
Undergraduate Researcher, Prof. Xuecheng Wu's Lab of Zhejiang University Dec 2023 - June 2024

- Designed a lightweight and efficient segmentation model optimized by combining U-Net with dilated convolutions and coordinate attention mechanisms based on Pytorch. The model was trained and tested, validating the improvements in performance and lightweighting of the proposed algorithm model with experiments were conducted to evaluate the model's segmentation performance on images under different cloud conditions.
- Deployed a multi-exposure fusion method to process the images with the ShWIMSEG dataset, a local cloud image dataset of the circumsolar region, to address the difficulty of segmenting the circumsolar region,
- Decreased the floating point operations per second (FLOPS) by 26.58% and reduced 13.75 MB parameters compared with U-net.

PROJECTS

Implementation of a mini RISC-V OS based on QEMU Simulator, Operating System Course Aug- Dec 2023

- Implemented in C step by step from context switch with trapping, priority process scheduling, virtual memory management with three-level page tables, dynamic memory allocation, loading execution of user-state programs, and thread forking
- Mastered RISC-V operating system mechanisms like M-S-U kernel mode, the associated control and status registers, and system calls in RISC-V; Had a skilled command of Assembly & inline assembly language, makefile, and gdb using

Implementation of a TCP Connection Using Sponge Library, Computer Networks Course Oct - Dec 2022

- Built a working TCP Connection Protocol with Sender and Receiver in C++, reached transmission speed of 190 Mbit/s
- Designed and implemented readable byte-stream data structures for TCP to ensure continuity and validity in transferring data
- Realized the message transmission mechanism with functions of message waiting between network interfaces and routes