

Sebastian Qu

 (858)291-2386  commcheck396@gmail.com  github.com/commcheck396  linkedin.com/in/sebastian-qu/

La Jolla, CA | Willing to Relocate

SKILLS

Programming Languages & Databases: Java, Python, Golang, C/C++, JavaScript, Ruby, Perl, MySQL, Redis.

Frameworks & Tools: SpringBoot, Kitex, Vue.js, Linux, Git, AWS, Thrift, Nginx, Jenkins, Docker, Selenium.

PROFESSIONAL EXPERIENCE

TikTok · San Jose, CA

Jun 2025 – Sept 2025

Intern Software Engineer

- Designed and implemented an ad campaign targeting injection management platform using Golang, Kitex, and MySQL, replacing direct calls to legacy APIs with a service-oriented, modular architecture.
- Built as an independent microservice to handle advertisers' injection requests.
- Implemented injector APIs with auto-expiration, permission checks, improving stability and operational control for ad targeting.
- Designed and developed a priority conflict detection mechanism to prevent injection overwrites between strategies, ensuring experiment accuracy and system reliability.
- Leveraged Hive to perform offline analysis and reconciliation of injection data, supporting experiment evaluation, consistency checks, and powering the construction of monitoring dashboards

Tesla · Shanghai, China

Jul 2023 – Jan 2024

Intern Software QA Engineer

- Developed an ASR (Automatic Speech Recognition) latency detector with Python, improving batch data processing speed by 67.7% and measurement accuracy by 23.5%, enabling more reliable performance evaluations.
- Redesigned the Jenkins Pipeline - Trip Planner Pipeline (TPP) for the Chinese market, incorporating junction view and other functionalities not present in North American versions.
- Developed tools for analyzing Splunk logs and Auto-Test Pipeline results on Tesla vehicles, streamlining monitoring and evaluation processes and accelerating pre-release regression testing by 20%.
- Created the VoiceRecNLU Pipeline with Groovy and Java in Jenkins to automatically evaluate the accuracy of the NLU module in newly built firmware, saving at least 60 minutes of validation time per firmware version.
- Established Tesla's Node Farm using Raspberry Pi and Linux to control and monitor vehicle PCs, deploying eight parallel nodes and reducing regression test suite and pipeline run time by 63.3% at Tesla Shanghai.

ASML · Wuhan, China

Jan 2023 – Jun 2023

Intern Software Development Engineer in Test

- Created a Code Coverage Analysis Tool with Python and GCC to assess automated test coverage per build, leading to a 37% increase in coverage and significantly enhancing accuracy and comprehensiveness.
- Designed Auto Packager & Auto Cleaner to optimize server performance by clearing expired jobs and packaging low-priority tasks, reducing average server load by 12%.
- Developed the Auto Verify & Auto Run Toolkit to automate daily job execution and Jira ticket verification, running unresolved tickets and checking for bug fixes after each nightly build, saving 45 minutes per ticket.
- Built toolkits for Bamboo and Qtest with Python to automate test plan execution and issue tracking, saving over 5 hours per version iteration.

SELECTED PROJECTS

TritonTube: Distributed Video Platform, *University of California, San Diego*

Apr 2025 – June 2025

- Built a YouTube-like backend system with gRPC-based communication across Web Server, Storage Nodes, and Admin CLI.
- Applied consistent hashing to enable dynamic node scaling and seamless DASH video segment migration.
- Leveraged etcd for strongly consistent metadata storage under high concurrency.
- Integrated ffmpeg for DASH video slicing and developed an Admin CLI for monitoring, migration, and redistribution.

Engineering construction project management system (B/S Web Application), *HUST*  

Dec 2023 – May 2024

- Completed the full-stack development of this undergraduate capstone project system independently.
- Utilized Spring Boot 3 framework and Java for backend development, and Vue 3 framework and JavaScript for frontend development.
- Managed data using MySQL for relational storage, Redis for caching, and MyBatis for ORM.

EDUCATION

University of California, San Diego(UCSD), La Jolla, USA

Sep 2024 - May 2026

Master of Science in Computer Science

Average GPA: 3.90/4.0

Huazhong University of Science and Technology(HUST), Wuhan, China

Sep 2020 – Jul 2024

Bachelor of Engineering in Computer Science

Average GPA: 3.93/4.0