

# JOE CHUA

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**Work Authorization:** Singapore Citizen; Eligible for the H-1B1-Singapore visa (exempted from the H-1B lottery)

## EDUCATION

### National University of Singapore(NUS)

Bachelor of Computing, Computer Science

**Honors with Distinction, Dean's List 2024, NUS Overseas Colleges (NOC)** – NUS's flagship entrepreneurship

programme: Overseas internship with high-growth tech startups globally

Singapore

Aug. 2022 – May 2026

### George Washington University

Spring Exchange - BSc. Computer Science

Washington D.C., USA

Jan. 2025 – May 2025

## EXPERIENCE

### Squarepoint Capital

Software Engineer Intern (Received Full-time return offer)

May 2025 – Nov 2025

Singapore

- Worked in a quantitative trading firm in a team that supports quantitative strategies by ingesting alpha data for traders/ researchers.
- Developed and maintained **Python**-based BAU (Business-As-Usual) scrapers to ingest alpha data from **Web sources, APIs, Email, PDF and SFTP servers**, using libraries such as **pandas, Selenium, camelot, BeautifulSoup**, and **socket programming**, ensuring data reliability and compatibility with downstream quant research workflows.
- Provided on-call production support by diagnosing and resolving issues such as broken parsers and failed ingestions under tight SLAs, minimizing downtime for trading workflows.
- Developed an in-house TLS/SSL tunneling library in Python (using **asyncio, ssl**, and **multiprocessing**) to replace the C-based stunnel, enabling secure ingestion of multiple FIX vendor feeds.
- Benchmarked and optimized concurrency models (threads vs multiprocessing vs **asyncio**), achieving throughput comparable to stunnel's C implementation while supporting secure connections.
- Enhanced system fault tolerance through custom verbose logging, retry mechanisms, automatic recovery, alerting systems, and connection throttling, reducing failure recovery time by **>70%**.

### August Robotics

Software Engineer Intern

Jan 2024 – Jul 2024

Shenzhen, China

- Worked alongside a global team of software & hardware engineers in a robotics startup providing automation in industrial workflows.
- Developed the company's shopping cart platform, a system for clients to purchase replacement parts, using **Vue.js, Django** and **Nginx** to build backend Views, Serializers, Models, and implement varying access permissions.
- Develop the consolidated hardware component testing station by setting up **Docker** containers to enable **RPC** communication between **Web & ROS** systems; Reduced the workload of 30+ hardware engineers to 2 non-technical testers.
- Wrote **launcher files, Python scripts using the Modbus protocol**, and **Bash scripts** within a **Catkin workspace** environment to allow users(the testers) to configure hardware component settings without technical expertise.
- Led major functional UI/UX and backend improvements to the hardware component testing application using **Bootstrap, TailwindCSS, FastAPI, SocketIO**, and **Three.js**, enabling web-based 3D model visualization for tester verification.

### PointStar Pte. Ltd.

Software Engineer Intern

May 2023 – Aug 2023

Jakarta, Indonesia

- Worked in a cloud consulting company enabling digitalization for global enterprises via solutions from Google Cloud, NetSuite, etc.
- Built a **React.js** dashboard to visualize API cost usage for 3,000+ clients; **Google BigQuery** data was paginated & stored in **MySQL**.
- Integrated Google OAuth via **Google Cloud Console** to authenticate & authorize clients, issuing and refreshing custom access **JWT**.
- Developed an Internal Booking System for 250 employees to de-conflict room reservations using **NodeJS, ExpressJS & React.js**.

### NUS School of Computing

Undergraduate Teacher Assistant

Aug 2023 – Dec 2023

Singapore

- CS1101S Programming Methodology: Tutored 10 students on functional programming, recursion, higher-order functions, algorithmic strategies, and time complexity analysis (Big O) concepts in **JavaScript**; Conducted tutorial sessions, provided consultations, prepared and graded assignments; Achieved a Tutor feedback rating of 4.5/5.

## PROJECTS

### NUS FinTech Month 2023 Hackathon (Finalists)

- Developed a blockchain POS system to enable cashierless consignment transactions with greater transparency and less manual effort.
- Built an automated lock system using **rasberry pi, 3D printing & Ethereum blockchain** for an unmanned payments station.
- Developed the backend system using **Node.js & Express.js**, and a self-serving kiosk system via **Python scripting & ERC20 tokens**, to facilitate registration and transparency in payment processes.

### Maps Hybrid App

- Developed a cross platform mobile app streamlining the process of finding popular local food places on a user-friendly map interface.
- Built an authentication system using **BCrypt** to hash passwords and authenticate custom made **Json Web Tokens** stored in cookies.
- Project was done using **HTML/CSS, Javascript, MongoDB, Node.js, Express.js, Capacitor by Ionic**.

## TECHNICAL SKILLS

**Programming Languages:** Python, JavaScript, C, Java, SQL, HTML/CSS, R

**Tools:** Git, Docker, Django, Linux/ Unix, Nginx, FastAPI, ROS, Node.js, Express.js, Vue.js, PostGreSQL, MySQL, Google Cloud Platform

**Relevant coursework:** Programming Methodology(A-), Computer Networks(A), Operating Systems(A-), Probability & Statistics(A), Computer Organisation(A-), Algorithms(A), Databases(A-), Computer Graphics(A-)

## LEADERSHIP

### Event Organizer

Shenzhen InnoX Academy Hardware Incubator Visit

- Organized a 100+ attendee panel discussion & networking event, managing logistics, agenda planning, and on-site execution.

### Commando Battalion, 1st Lieutenant

Singapore Armed Forces

- Commanded a 12-member elite detachment through high-intensity jungle warfare, close-quarters combat, and airborne training, while planning and executing company-level exercises for 60+ personnel; Completed 2 years of mandatory national service