

QUEK XIN YING

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Email: qxy.quek@gmail.com

Portfolio: streamdash.ch/portfolio

GitHub: github.com/opedium • Singapore

ABOUT ME

I am an Applied AI & Analytics student at Nanyang Polytechnic with a strong practical focus on full-stack web development, data engineering, and real-time event systems. I enjoy architecting reliable software from the ground up—from clean, accessible user interfaces to backend microservices handling high-throughput streaming telemetry and network protocols. Experienced in working with multi-branch Git repositories, team code reviews, and deploying live production applications.

EDUCATION

Diploma in Applied AI & Analytics (DAAA)

GPA: 3.63 / 4.0

School of Information Technology, Nanyang Polytechnic

Graduation: 2028

Core Competencies & Coursework:

- **Full-Stack Application Development:** Web architectures, REST API design, relational schema modeling, and modern UI state management.
- **DataOps & MLOps:** Ingestion pipelines, Snowflake data modeling, automated test scripts, and model deployment fundamentals.
- **AI Ethics & Governance:** Responsible AI principles, data privacy (PDPA), and evaluation of model decisions.

TECHNICAL SKILLS

Programming: Python (Pandas, NumPy, Scikit-Learn), JavaScript (ES6+), Java, SQL, HTML5, CSS3

Web & Frameworks: React (Vite), Express.js, Bootstrap 5, Flask, Tailwind CSS, Node.js, Socket.io

Databases & Tools: PostgreSQL (Sequelize), Snowflake, SQLite (WAL mode), MongoDB, Git/GitLab, Linux/Bash

Protocols & Other: Protocol Buffers (Protobuf), WebSockets, REST APIs, UI wireframing

FEATURED ACADEMIC PROJECT

GenConnect — Intergenerational Community Platform

Lead Developer

Python, Flask, Bootstrap 5, SQLite, PostgreSQL, GitLab (190+ commits across 17 branches)

- Built a full-stack community web app designed to connect senior citizens with youth volunteers for digital literacy and storytelling sessions.
- Prioritized senior accessibility: implemented dynamic one-click font resizing, high-contrast display modes, large touch targets, and clean layout hierarchy.
- Developed identity verification options including a simulated Singpass login flow and a webcam-based facial verification check.
- Created an interest-matching algorithm that pairs seniors with volunteers based on shared hobbies, spoken languages, and location.
- Managed the team GitLab repository, organizing sprint branches, reviewing merge requests, and handling team code reviews.
- Live website: <https://streamdash.ch/genconnect/>

MORE ACADEMIC PROJECTS

OpenGlimpse — SCCCI Overseas Delegation Real-Time Attendance System

Module Owner & Full-Stack Developer

React 19, Vite, Node.js Express, PostgreSQL (Sequelize), Socket.io, Dexie.js (Offline Sync)

- **System Purpose:** Developed an event management and attendance system for SCCCI (Singapore Chinese Chamber of Commerce & Industry) overseas business delegations of 30–100+ delegates across multiple coaches and venues.
- **Module Ownership (Programme & Route Management):** Designed and implemented the complete REST API and UI for programme creation, coach/route assignments, participant rosters, and ready-to-depart status verification.
- **Live Attendance & Multi-Device Sync:** Engineered real-time dashboard updates via Socket.io rooms, allowing multiple secretariat staff across separate coaches to view live present/missing headcounts simultaneously.
- **Offline Resilience:** Integrated Dexie.js (IndexedDB) for local caching and offline write queueing, replaying attendance operations upon reconnecting without data loss.
- **Live Deployment:** <https://streamdash.ch/openglimpse/>

SIT Club Activity & Events Portal

Frontend Developer & Designer

HTML5, CSS3, JavaScript (ES6+), Bootstrap 5, Responsive Design

- Developed a responsive web portal for NYP's School of IT club, centralizing event sign-ups, workshop schedules, and sub-club tracks like Dev Swift and NYP Cloud.
- Designed interactive event cards with category filtering, dynamic registration modals, and mobile-friendly layouts.
- Applied UX and mobile-first design principles aligned with IBM SkillsBuild Web Design standards.
- Live website: <https://streamdash.ch/sitclub/>

SIDE PROJECTS & INDEPENDENT WORK

Barra 2.0 & StreamCheck — Real-Time Streaming Data Monitor

Developer & Maintainer

Python 3.11, WebSockets, Protobuf, SQLite (WAL mode), Chart.js, Linux Service

- Built an automated backend service that listens to live streaming WebSocket feeds and logs high-frequency events in real time.
- Decoded 13 different live message types (chat comments, viewer joins, gifts) using 85+ reverse-engineered Protobuf schemas.
- Added background watchdog routines and automatic reconnection with exponential backoff to handle network drops cleanly.
- Built StreamCheck, a companion web dashboard with live Chart.js graphs showing viewer trends and chat volume.
- Live monitor: streamdash.ch/streamcheck • GitHub: [opedium/Barra](https://github.com/opedium/Barra)

WeiboClient — Automation Toolkit & Media App

Developer

Python 3, React, REST APIs, MongoDB, Appwrite Cloud Functions

- Built both a command-line tool and a React web console for browsing feeds, managing login sessions, and scheduling posts.
- Added chunked media uploads, session cookie handling, and automatic retry logic for dependable API requests.
- Used MongoDB and Appwrite cloud functions for secure credential storage and async post queuing.
- Live webapp: streamdash.ch/weiboclient • GitHub: [opedium/WeiboClient](https://github.com/opedium/WeiboClient)

OPEN-SOURCE CONTRIBUTIONS

douyin-live-proto — Protocol Buffer Schema Definitions

Open-Source Creator

Protocol Buffers (Protobuf v3), Binary Packet Analysis, Python / Go / TypeScript

- Analyzed raw WebSocket packet streams and documented 85+ Protobuf message structures for community use.
- Built an offline testing suite with 61 sanitized test payloads to verify parsers without needing live network access.
- Created automated build scripts to compile schema definitions into Python, TypeScript, and Go bindings.
- GitHub repository: <https://github.com/opedium/douyin-live-proto>

WORK EXPERIENCE

NTUC FairPrice — Logistics & Operations Assistant

Dec 2024 – Jan 2025 | Singapore

- Handled daily stock replenishment and inventory checks during the peak holiday shopping season.
- Worked closely with warehouse supervisors and retail floor teams to keep shelves well-stocked and resolve inventory count issues quickly.
- Maintained workplace safety and food handling standards in a busy supermarket environment.

CERTIFICATIONS

- **Anthropic - AI Fluency:** Prompt engineering techniques, practical safety considerations, and responsible AI usage.
- **Snowflake Certified Associate:** Cloud data warehousing fundamentals, SQL queries, and basic data modeling concepts.
- **IBM SkillsBuild Badges:** Web Development and UX Design Fundamentals (responsive grids, user research, wireframing).

ADDITIONAL DETAILS

- **Languages:** English (Fluent), Chinese (Fluent).
- **Interests:** Full-Stack Web Development, Data Engineering, Real-Time Systems, Frontend UX.
- **Live Projects Hub:** <https://streamdash.ch/portfolio/> (All projects deployed and testable).