

Furqan Navid

343-422-7238 | furqanavid12@gmail.com | [linkedin.com/in/furqan-navid](https://www.linkedin.com/in/furqan-navid) | <https://github.com/Furqan-N>

TECHNICAL SKILLS

Languages: Python (FastAPI, Flask), SQL (Postgres), JavaScript, Java | **Tools:** Docker, Git, Redis, Celery, SQLAlchemy, Alembic, Pytest | **Libraries:** Hugging Face, Pandas, NumPy, Pydantic, Matplotlib

EDUCATION

University of Waterloo

Bachelor of Mathematics (Honours)

Waterloo, ON

2025 – 2029 (*Expected*)

PROJECTS

Study Load Optimizer for UW Students

[GitHub Repo](#) | [Live Demo](#)

Full Stack Web Application | Next.js, FastAPI, PostgreSQL, Docker, Python

- Developed a **full-stack web application** using **Next.js** and **FastAPI** that parses UW syllabi to automate grade forecasting and generate personalized study schedules
- Designed a normalized **PostgreSQL** schema with **SQLAlchemy** across 6 models (courses, assessments, availability, study sessions, study blocks, users), with **JWT authentication** securing all API routes
- Achieved a peak of **30 daily active users** during beta, with a constraint-based planner that schedules study blocks around each student's real-time availability and remaining workload
- Containerized the backend with Docker and managed 4 incremental schema migrations via **Alembic**, with an idempotent plan-generation endpoint validated through **pytest** integration tests

AI Sentiment Analyzer

[GitHub Repo](#)

Full Stack ML Application | FastAPI, Python, Hugging Face Transformers, Docker, PostgreSQL

- Architected a **full-stack NLP system** to process large-scale unstructured text, exposing core sentiment analysis functionality through both a **FastAPI REST API** and a **CLI** for end-to-end integration.
- Engineered **batch and real-time inference pipelines** capable of processing **10k+ text samples (~1.2 GB)** with **sub-second latency**, focusing on high-throughput data engineering and pipeline reliability.
- Optimized **system performance** by implementing **PostgreSQL indexing** to maintain sub-millisecond query response times during scaling, while benchmarking **Hugging Face** model accuracy against public datasets.

Deadman switch

[GitHub Repo](#)

Distributed Backend System | Python, FastAPI, PostgreSQL, Redis, Celery, Docker

- Designed and implemented a web server to monitor user liveness and trigger automated fallback actions
- Built a background watchdog service using **Celery** and **Redis** for distributed task queuing, with Postgres persisting contract state and history
- Leveraged indexes and transactions to ensure performant queries and valid state transitions under distributed load

LEADERSHIP & ACTIVITIES

Computer Science Club (High School) — Executive Member

Sept 2023 – Jun 2025

- Co-organized a multi-school hackathon with other CS clubs, supporting teams building and presenting software projects
- Led weekly technical workshops for **30+ members**, teaching fundamental concepts in Python and web development through hands-on coding sessions.

FIRST Robotics Competition (FRC 4476) – Team Member

Sept 2021 – Jun 2024

- Assisted with the development of robot code in Java, helping to write and maintain logic for the drivetrain and intake subsystems.
- Supported software testing by running calibration routines for PID controllers, ensuring the robot moved accurately during the autonomous phase.