

Kshitij Savi Mavai

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EDUCATION

Carleton University

Bachelor of Engineering in Software Engineering

Ottawa, ON

September 2022 – April 2027

TECHNICAL SKILLS

Languages: Python, C, Java, Swift, JavaScript, TypeScript, SQL, HTML/CSS, Verilog, Assembly, Ruby, Bash

Frameworks: React.js, React Native, Node.js, SwiftUI, Spring Boot, WidgetKit, Django, JUnit, TailwindCSS

Databases & Cloud: PostgreSQL, MongoDB, SQLite, Azure, Docker, Firebase, Supabase

Libraries & AI: Pandas, TensorFlow.js, MoveNet, Matplotlib, BeautifulSoup, NLTK

Developer Tools: Git, Selenium, Xcode, Jira, Figma, CI/CD, Visual Studio Code

EXPERIENCE

House of Commons

Data Engineering Intern

Ottawa, ON

June 2025 – August 2025

- Architected automated ETL pipelines using **Python** to ingest social media metrics via **Meta API**, storing results in **SQL databases** and enabling performance tracking for **100+ MP accounts**.
- Engineered NLP-driven sentiment analysis scripts with **Pandas** and **NLTK** to aggregate **RSS news feeds**, slashing manual reporting time by **40%** and accelerating legislative briefing cycles.
- Built a scalable scraping infrastructure using **BeautifulSoup** to parse InfoLib datasets, auto-generating **campaign intelligence briefs** for senior stakeholders.

PROJECTS

OC Transpo Bus Departure App & Widget

Swift, SwiftUI, WidgetKit, CoreLocation, GTFS

- Developed a full-scale iOS application and high-performance iOS widget to display real-time bus departures, leveraging **CoreLocation** and **WidgetKit** for sub-second updates across **3,000+ transit stops**.
- Engineered a custom **GTFS data pipeline** with **GeoJSON parsing** and optimized distance-based queries, reducing memory footprint by **60%** while handling complex route data for **50+ bus routes**.

Academic Course Information System

Python, SQLite, PyPDF2, DeepSeek API, Perplexity API, Azure

- Built a digital academic platform serving **3,200+ engineering students**, deploying a custom **Python** automation agent on **Microsoft Azure** to handle **500+ daily resource requests** via optimized **SQLite** queries.
- Integrated a multi-model LLM pipeline (DeepSeek, Perplexity) to automate academic support and utilized **PyPDF2** to enforce content integrity on distributed resources, reducing manual moderation overhead by **90%**.

Posture Tracking Chrome Extension

React.js, TypeScript, TensorFlow.js, MoveNet, WebGL

- Engineered a real-time computer vision pipeline using **TensorFlow.js** and **MoveNet** to track **17 keypoints**, utilizing **WebGL** acceleration to process video frames with sub-second latency.
- Implemented content scripts in **React.js** and **TypeScript**, utilizing **canvas-based visualization** to provide live posture feedback across browser tabs while maintaining **60 FPS** performance.

Automated Room Booking System

Java, Selenium, Spring Boot, Docker

- Engineered a robust automation tool using **Java** and **Selenium WebDriver**, utilizing precise **XPath targeting** to navigate dynamic DOM elements and secure room bookings with **99% success rate**.
- Containerized the **Spring Boot** service with **Docker** and implemented fully autonomous nightly execution via **GitHub Actions**, eliminating manual scheduling.

LEADERSHIP EXPERIENCE

Co-Director of Promotions - Carleton CUSEC Society

June 2024 - Present

- Led promotional campaigns that engaged **80+ Carleton University students**, driving participation in the **Canadian University Software Engineering Conference (CUSEC)**.

Scotiabank Canada's Top Students Participant

November 2022 / November 2023

- Selected for two consecutive years (Top 8% of 500+ applicants) to solve predictive analytics strategies to **Scotiabank** executives, pitching strategic solutions projected to drive a **25% increase** in user acquisition