Brandon Kong

brandonwkong | Brandon Kong | b2kong@uwaterloo.ca | +1 519-729-1865 | brandonkong.com

Work Experience

Rogers Communications Sept 2025 - Dec 2025

Machine Learning Engineer Intern | *Python, AWS, DynamoDB* Toronto, ON

- Built a centralized services prototype using **AWS Bedrock Agents**, delivering personalized bundle recommendations; designed evaluation harness + KPI reporting for adoption lift and offer relevance.
- Designed and implemented a **multi-agent orchestration layer** to automate end-to-end buyflows including stateful workflow execution and tool-calling.
- Processed and analyzed 20,000+ employee survey complaints by shipping an **ETL + LLM** insight pipeline.

Kisoji Biotechnology May 2025 - Sept 2025

Machine Learning Engineer Intern | *Python, Pytorch, FastAPI, CUDA* Toronto, ON

- Developed and evaluated **antibody sequence** $\rightarrow$ **binding prediction diffusion** models for AI-generated candidates, establishing reproducible **training + validation protocols** and improving screening throughput (saving **$20K+** in wet-lab costs).
- Built a scalable PyTorch training stack and profiled **GPU utilization / throughput** to reduce experiment turnaround time by **30%**.
- Deployed inference as an internal **FastAPI scoring service**, enabling rapid candidate iteration and integration into downstream scientific workflows.

Adanomad Jan 2025 - Apr 2025

Software Engineering Intern | *Python, TypeScript, OpenAI, Next.js, Supabase* Hamilton, ON

- Shipped a real-time call handling dashboard using WebSockets and concurrent request pooling, supporting **200+ active users** with stable low-latency updates.
- Architected a modular **RAG + LLM workflow engine** reducing response latency by **80%** through **retrieval filtering, caching, and parallel tool execution**.
- Integrated external-tool execution via **LangChain toolchains**, enabling agentic actions with safe structured outputs and API-guardrails.

UW Visual Image Processing Lab May 2024 - Aug 2024

Software Engineering Intern | *Python, C++, CLI, .NET* Waterloo, ON

- Built GIS-aware preprocessing + labeling pipelines to align SAR imagery with Canadian Ice Service ice charts / polygon regions, enabling pixel-level ground-truth generation.
- Automated batch inference + evaluation workflows, increasing image-analysis throughput by 200% with reproducible outputs and CLI tooling.

Projects

ClassiMail | *Python, Flask, Next, OpenAI, SQLite, gRPC*

- Designed and deployed a full-stack Gmail classification pipeline to process and categorize 5,000+ emails, leveraging OpenAI models for real-time filtering and sender extraction, persisting results in a SQLite **relational database**.
- Containerized the system with **Docker** and integrated **Prometheus** and **Grafana** for real-time performance monitoring and metrics visualization.

HealthAI | *Python, LangGraph, LlamaIndex, OpenAI, FastAPI*

- Built an agentic healthcare intake + triage system using **LangGraph** for **multi-step workflow orchestration** with deterministic branching + safety gating.
- Implemented **RAG** via **LlamaIndex** ingestion pipeline to ground triage decisions in uploaded documents.
- Integrated **MCP-based tool execution** to trigger post-triage actions only after approved decision states.

Education

Honours Bachelor of Computer Engineering 2028

- Relevant Courses: Algorithms and Data Structures, Systems Programming and Concurrency, Compilers, Real-Time Operating Systems

Skills

Coding Languages	Python, TypeScript, JavaScript, C++, SQL, HTML, CSS
Frameworks/Libraries	Next, React, Express, Langchain, TensorFlow, PyTorch, OpenCV, Scikit-learn, NumPy, matplotlib, Pandas
Tools	OpenAI, AWS, Docker, Prometheus, Grafana, SQL, DynamoDB, Git, Bash, WSL, VS Code