

RYAN CHATTOPADHYAY

Edmonton, AB

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Education

University of Alberta

Bachelor of Science – BS, Computing Science & Math

Expected Apr 2027

Edmonton, AB

Relevant Coursework

- Data Structures
- Algorithms Analysis
- Machine Learning
- OOPs
- Software Development
- Database Management
- System Design
- Computer Architecture

Experience

AltaML

May 2025 – Aug 2025

Software Developer Intern

Edmonton, AB

- Shipped **18+** production REST endpoints in FastAPI with GPT/4mini integration, instrumented with auth, structured logging, and metrics; delivered **<200 ms** average latency.
- Modeled **3** Postgres schemas with indexing/constraints, supporting **5K+** rows across dev & staging with clean migration paths.
- Built **10+** React Native + TypeScript components, boosting responsiveness and cross-platform UX consistency while reducing duplication.
- Implemented **2** LangGraph pipelines for tool-augmented GPT agents, cutting prompt-handling errors by **15%** in internal testing.
- Delivered hybrid search on Postgres (BM25 + **pgvector** over vector-chunked docs with re-ranking), indexing **thousands** of chunks and serving **<200 ms** query latency for semantic + keyword queries.
- Collaborated in Agile sprints with Azure DevOps: **15** merged PRs, **10+** PR reviews, and **90%+** on-time delivery for assigned tickets.
- Operationalized CI/CD in **Azure DevOps** with gated checks, dependency caching, and parallelization; cut pipeline duration **12→6 min (50%)**, raised pass rate to **98%**, and shortened PR lead time by **35%**.
- Implemented unit & integration tests using **pytest** and **Jest** (**220+** tests, **86%** line coverage); reduced flaky tests by **40%** and post-merge defects by **30%**.

MedxAI

May 2024 – Apr 2025

Software Engineer Intern

Edmonton, AB

- Scraped **12+** websites with Python, BeautifulSoup, and Selenium; automated data collection pipelines and reduced manual effort by **30%**.
- Processed and cleaned **100,000+** records using NumPy and pandas, achieving **99.8%** data integrity for downstream analysis.
- Built a polynomial regression model in **scikitlearn** to forecast COVID19 trends with **85%+** accuracy; validated against heldout data.
- Designed visualization dashboards in **Matplotlib** (actual vs. predicted), improving report readability by **40%** for stakeholders.

Projects

UalbertaFinalExamScheduler | Python, BeautifulSoup, Reactjs, TailwindCSS

Dec 2024 – Jan 2025

- Scraped and processed **12,000+** JSON records from UAlberta webpages using BeautifulSoup; automated the data-extraction/ETL pipeline.
- Shipped a responsive **React** interface (with TailwindCSS) serving **1,000+** students for final-exam scheduling.
- Integrated **Google Calendar API** with **Express.js** for one-click event adds to users' personal calendars.
- Achieved **99.9%** uptime on Netlify and optimized Core Web Vitals to **1.85s** LCP.

Technical Skills

Programming Languages: Python, TypeScript, JavaScript, C, Dart (Flutter), SQL, HTML/CSS

Frameworks & Libraries: FastAPI, React, React Native, Next.js, Flask, Express.js, Node.js, LangChain, LangGraph, Tailwind CSS, Material UI, shadcn/ui

Databases & Search: PostgreSQL, pgvector, MongoDB, Pinecone, Supabase (Storage & Postgres), BM25 (IR)

ML/AI & Data Tools: scikit-learn, pandas, NumPy, Matplotlib, Groq API, LLaMA 3.2, GPT-4 mini

DevOps & Testing: Azure DevOps (CI/CD), Git, pytest, Jest

Tools & Platforms: Firebase, Supabase, Netlify, Google Calendar API, VS Code, Visual Studio, PyCharm