

Nathan Yan

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EDUCATION

University of Alberta

Bachelor of Science in Computer Science

Edmonton, Alberta

Sep. 2023 – May 2027

- Relevant Coursework: Data Structures and Algorithms, Linear Algebra, Digital Image Processing, Artificial Intelligence, Computer Organization and Architecture, Discrete Math, Statistics, Calculus

EXPERIENCE

Business Analyst

StackDX

May 2025 – August 2025

Calgary, Alberta

- Developed a user interface using **C#, ASP.NET Razor, and JavaScript** to display and interact with CSV-like files, allowing users to easily view, sort, and filter data in tables, charts, and reports. Handling over **900k** previously unsupported files.
- Designed and implemented **C#** scripts to test and evaluate the performance of fine-tuned AI models, ensuring optimal classification accuracy and reliability for document processing tasks.
- Achieved over **95%** classification accuracy by developing and training multiple machine learning models to categorize document content, improving automated data processing and reliability

Artificial Intelligence Research Assistant

University of Alberta

May 2024 – August 2024

Edmonton, Alberta

- Used AI to analyze toxicity of various comments in bug-tracking forums such as GitHub, StackOverflow, and Bugzilla
- Developed automated data processing and filtering pipelines in **Python** to enhance sentiment classification accuracy, eliminating noise, cleaning text, and organizing datasets to optimize AI-driven toxicity detection.
- Analyzed and handled over **5 million** comments to statistically identify trends in online toxicity

PROJECTS

Safe Space (Hack The Bias) | *TanStack Start, React, Typescript, Convex, Clerk*

- Helped users discover support communities (depression, poverty, cancer, etc.) by clustering related spaces with TF-IDF similarity and visualizing them as an interactive, live-updating bubble graph.
- Built anonymous discussion threads within each Space and private outreach through DMs, where users can choose to reveal their name when requesting or offering help.
- Implemented layered content moderation (rules-based prefilter + **OpenRouter API**) that blocks harmful/sexual content, auto-removes flagged messages, and injects crisis resources for self-harm.

Block Buddy (Hack The Change) | *TypeScript, MongoDB, Express, React, Node.js*

- Built an AI-assisted reporting experience capable of transforming camera uploads and descriptions into structured bylaw issues, automatically incorporating location and weather context to prioritize impact.
- Developed multi-channel community chat to facilitate neighbourhood, city, and private conversations with threaded discussions and inboxes, empowering residents to coordinate and escalate issues.
- Created geospatial map visualizations and a dynamic complaint feed using **OpenStreetMap** tiles.

NASA Space Apps Challenge | *Next.js, TypeScript, TailwindCSS, PostgreSQL*

- Scraped and processed **600+** research articles to automatically extract and rank impactful keywords, enabling quick discovery of meaningful connections across topics.
- Developed interactive mind maps and histograms to visualize frequency-based keyword relationships, empowering users to intuitively explore, compare, and interpret scientific themes within complex datasets.
- Integrated **Google Gemini AI API** to deliver real-time summarization and conversational insights, allowing users to interactively query and analyze large sets of research abstracts through a chat-like interface.

TECHNICAL SKILLS

Languages: Java, Python, C, C++, C#, SQL, TypeScript, JavaScript, HTML/CSS

Frameworks: ASP.NET, Razor, React, Next.js, TanStack Start, Node.js, Django

Developer Tools: Git, GitHub, VS Code, Visual Studio, PyCharm, IntelliJ, Eclipse, Microsoft Azure

Libraries: pandas, NumPy, Matplotlib, Scikit-Learn, PyTorch, ML.NET