Nathan Yan

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Education

University of Alberta Edmonton, Alberta

Bachelor of Science in Computer Science *Sep. 2023 – May 2027*

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

Experience

Business Analyst May 2025 – August 2025

StackDX *Calgary, Alberta*

- Developed a user interface using C#, ASP.NET Razor, HTML, JavaScript, and CSS 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 May 2024 – August 2024

University of Alberta *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
- Under review publication of research paper to the ESEM 2025

Projects

BlockBuddy (HackTheChange) | *TypeScript, MongoDB, Express, React, Node.js* November 2025

- 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.

NASA Space Apps Challenge | *Next.js, TypeScript, TailwindCSS, PostgreSQL* October 2025

- Built a dynamic full-stack Next.js application capable of scraping and processing hundreds of 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.

Ray Tracing and 3D Rendering | *C* December 2024

- Developed a custom 3D ray tracer with sphere intersection, lighting, and shading
- Implemented core vector operations and color processing
- Optimized performance with dynamic memory allocation, Makefile automation, and efficient rendering techniques

Technical Skills

Languages: Java, Python, C, C++, C#, SQL, TypeScript, JavaScript, HTML/CSS
Frameworks: ASP.NET, Razor, React, 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