Andy Tran

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EDUCATION

University of Alberta   Edmonton, AB
Bachelor of Science with Honors in Computing Science   *September 2021 – May 2025*
- GPA: 3.9
- *Relevant Coursework*: Web Applications and Architecture (CMPUT 404); Compiler Design (CMPUT 415); Software Process and Product Management (CMPUT 401); Introduction to Software Engineering (CMPUT 301); Operating System Concepts (CMPUT 379); Advanced Games Programming (CMPUT 350); Database Management Systems (CMPUT 291); Algorithms (CMPUT 204); Computer Architecture and Organization (CMPUT 229)

EXPERIENCE

Student IT Solutions Analyst   May 2024 – August 2024
Ovintiv Inc.   *Calgary, AB*
- Assisted in constructing a large language model for the company's IT Knowledge Bases utilizing **Azure OpenAI** and **Azure AI Search**, decreasing the time and effort required to search through numerous knowledge articles
- Developed an efficient data pipeline with **FastAPI** to automate the synchronization process of more than 4500 knowledge articles between **ServiceNow** and **Azure Blob Storage**, reducing manual effort by 95%
- Automated over twenty workflows in ServiceNow, saving more than 100 hours of manual work per month

Undergraduate Teaching Assistant   September 2023 – April 2024
University of Alberta   *Edmonton, AB*
- Helped more than 1000 students in two courses - CMPUT 201 and CMPUT 204 - with understanding complex **algorithms** and **C programming** concepts during office hours and lab sessions
- Graded assignments and exams, providing detailed feedback to help students improve coding skills and algorithmic thinking, thereby promoting continuous learning and improvement
- Collaborated with the course instructor to develop teaching materials and conduct review sessions, enhancing overall course effectiveness and student engagement

PROJECTS

Go Monkey Lang Interpreter | *Go*   July 2024 – Present
- Designed and implemented an interpreter for the Monkey programming language from Thorsten Ball's *Write An Interpreter In Go* in **Go**, including key components such as lexical analysis, syntactic analysis, and evaluation, ensuring a fully functional and extensible interpreter
- Applied best practices in software development, such as modular code organization, comprehensive testing, and detailed documentation, to ensure maintainability, scalability, and high code quality

Four-Colour Map Theorem Solver | *Next.js, Go, Flask, PostgreSQL*   September 2023 – July 2024
- Developed a web interface using **Next.js** (with **React.js** and **TailwindCSS**) and **TypeScript** and a drawing canvas using **p5.js**, with Bresenham's line algorithm implemented for precise line rendering
- Implemented a backtracking algorithm to efficiently color maps with no more than four colors using **Python** and **Flask**, effectively solving the Four-Colour Map Theorem
- Integrated user authentication with JWT using **Go's net/http** and **PostgreSQL**, enabling secure sign-in and profile management

NexaPulse Distributed Social Networking | *Svelte, Django, PostgreSQL, Heroku*   January 2024 – April 2024
- Developed a social networking web interface using **Svelte**. Collaborated with three other groups in CMPUT 404 to build a distributed system of APIs to allow node-to-node connection between applications
- Engineered secure and scalable backend infrastructure with **Django** and **PostgreSQL**, integrating robust authentication and authorization mechanisms to ensure data integrity, privacy, and overall system performance

TECHNICAL SKILLS

Languages: Python, Go, C/C++, JavaScript/TypeScript, HTML/CSS
Front-End: React, Redux, Next.js, Svelte, TailwindCSS, Bootstrap
Back-End: Django, Flask, FastAPI, Go's net/http, PostgreSQL, MongoDB
Cloud: Microsoft Azure, ServiceNow
Developer Tools: Git/GitHub, Docker, Postman, Vite