Kevin Tran

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Education

Toronto Metropolitan University — Toronto, Ontario
Bachelor of Science in Computer Science (Co-op) — *Sept. 2024 – April 2029*

Projects

Rubik's Cube Solver | *Python, HTML, CSS, JavaScript, FastAPI*

- Implemented a layer-by-layer solving system (**CFOP-style**), including **F2L, OLL,** and **PLL** case detection, capable of solving any valid scramble across **43 quintillion** possible configurations
- Built dynamic case analysis logic to classify cube states and select appropriate algorithm sequences
- Developed a **REST API** using **FastAPI** to expose solver logic as HTTP endpoints, enabling communication between the Python backend and JavaScript frontend
- Built an interactive web demo featuring real-time **3D cube visualization** and step-by-step solution animation

IMDB Data Insights & Movie Recommender | *Python, Streamlit*

- Developed a **Python-based** platform that recommends movies and TV shows based on user-selected titles, genres, and popularity metrics, processing around $\sim$ **1 million IMDb titles**
- Implemented **sorting and filtering** functionality to list content by rating, number of votes, and release year, enabling dynamic exploration of popular titles
- Processed and analyzed **IMDb datasets** using **pandas** and **NumPy** to handle large-scale data efficiently and generate accurate recommendations

Gengar Simulator | *Java*

- Designed a turn-based simulation game based on the video game "Pokemon"
- Applied **linear algebra** concepts **(points, matrices)** to control **animation** paths and drawing logic
- Built an interactive **GUI** with **JSwing** for animations and to enhance user experience

Infinite RC Car (Team Project) | *C++, Linux*

- Collaborated on building a long-range **RC car** using **Raspberry Pi** and embedded components
- Assisted with soldering, wiring, and assembly of motors and power systems
- Worked with **C++** and **Linux** on Raspberry Pi to test and debug vehicle control behavior
- Helped troubleshoot power, connectivity, and stability issues during testing

Technical Skills

Languages: Python, Java, C, HTML/CSS, JavaScript, Assembly, SQL
Frameworks: FastAPI, JSwing
Developer Tools: Git, VS Code, Excel
Libraries: pandas, NumPy

Experience

Coding Instructor — June 2024 – Sept. 2025
STEM Camp — *Newmarket, Ontario*

- Led hands-on learning sessions focused on coding and robotics, fostering student engagement and technical understanding
- Guided students through practical applications of loops, conditionals, and variables in Python, with practical exercises
- Mentored students in debugging and problem-solving, fostering critical thinking and coding proficiency

Tax Preparer Associate (Co-op) — Feb. 2022 – June 2022
Liberty Tax — *Newmarket, Ontario*

- Conducted detailed client interviews to gather accurate financial and personal information for tax preparation
- Informed clients of required procedures, documentation, and expected timelines throughout the tax filing process
- Prepared and entered tax return data using **Excel** and company software, ensuring accuracy and compliance with CRA standards