

Nikolas “Dax” Manuel

Canadian Citizen

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EDUCATION

University of New Brunswick

Fredericton, NB

Bachelor of Science in Software Engineering (Co-op) / Minor in Mathematics.

Sep 2024 – Apr 2029

Relevant Coursework: Data Structures and Algorithms, Software Engineering, Databases, Object-Oriented Programming.

TECHNICAL SKILLS

Programming Languages: Python, Java, JavaScript, C, HTML/CSS, SQL.

Frameworks/Libraries: NumPy, Pandas, PyTorch, Scikit-learn, Spring Boot, FastAPI, Next.js, Three.js

Developer/Engineering Tools: Linux, Git, GitHub, Supabase, Visual Studio Code, Fusion 360, MATLAB

Courses/Certifications: [Code with Mosh: Ultimate JavaScript Series](#), [Code with Mosh: Data Structures and Algorithms](#).

PROJECTS

Vehicle Perception Model | [GitHub](#)

Python, PyTorch, Pandas, NumPy, Google Cloud Platform

- Converted PointPillars model research into a fully working end-to-end 3D vehicle perception pipeline from LiDAR data preprocessing, feature encoding/decoding to 3D bounding box predictions.
- Trained a PointPillars-based model in PyTorch using the Waymo Open Perception Dataset in the Google Cloud Platform.
- Preprocessed 150,000+** LiDAR frames converting Parquet point cloud files into NumPy arrays for efficient training.

CAD Automation Platform | McHacks 2026 | [GitHub](#) | [Demo](#)

NextJS, FastAPI, Gemini API, OpenSCAD

- Developed an AI-driven CAD pipeline converting natural language prompts into 3D models with Gemini API and OpenSCAD.
- Built a full-stack pipeline with FastAPI and Next.js to compile OpenSCAD into STL files and render 3D models using Three.js

Employee Management Application | CS2043 Term Project | [GitHub](#) **Spring Boot, JavaScript, HTML/CSS, PostgreSQL**

- Led a group of 4 as scrum master, **facilitated agile principles** for sprint planning, execution, and review to build a full stack application integrating **RESTful API** architecture with Spring Boot, JavaScript, and PostgreSQL relational database.

Soccer Match Prediction Model | [GitHub](#)

Python, Scikit-Learn, Pandas, NumPy

- Built a machine learning model using scikit-learn to predict Premier League matches based on previous match data.
- Preprocessed 700+ Premier League matches** using pandas and NumPy to optimize model performance.

EXPERIENCE

UNB Formula Racing

Sep 2025 - Present

Electrical Powertrain Member

- Contributed to research of the integration of an Acceleration Pedal Position Sensor, ensuring alignment with Formula SAE electrical guidelines and requirements, and analyzed building vs buying an APPS to balance costs and performance
- Collaborated with other members on the research and integration of the APPS and other low-voltage electrical systems.

LEADERSHIP & ACTIVITIES

Youth Soccer Coach

April 2024 - Present

Fredericton District Soccer Association

Fredericton, NB

- Demonstrated strong leadership in managing large groups of children in a playing field at practices and summer camps.
- Provided mentorship and coaching to 100+ young athletes, to improve their skills and understanding of the game..

UNB REDS Men's Varsity Soccer Player

Aug 2024 – Present

- Committed **16+ hours weekly** for training, workouts, and games in a high performance environment.

Other Interests/Activities: Travel, Fitness, Soccer, Pickleball, Skiing, Piano