Michael (Wen Tao) Mo

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EDUCATION

BASc., Engineering Science (Machine Intelligence) + PEY Co-op ***Class of 2026***
University of Toronto, Toronto, ON

- CGPA: *3.88/4.00*
- Relevant Coursework: *Intro to Computer Programming in Python (A+), Data Structures and Algorithms in C (A+), Digital and Computer Systems (in progress)*

SKILLS

- **Technical:** JavaScript, Python, C, Java, Git, full-stack web development, machine learning, TensorFlow, NodeJS, Express, React, MongoDB, Mongoose, MATLAB, CAD, VBA Script
- **Interpersonal:** problem-solving, communication, documentation, detail-oriented, organization

WORK EXPERIENCE

Machine Learning Intern ***May 2023 – August 2023***
King Mongkut's University of Technology, Thonburi (Thailand)

Parkinson's Disease Freezing of Gait Detection

- Created transformer encoder models with LSTM layers in TensorFlow that detect Parkinson's disease freezing of gait events in time-series acceleration data.
- Explored 6 different feature sets based on body acceleration feature extraction that produced models up to 25% better-performing than base-line acceleration features.
- Model achieved a top 10% score in Kaggle's Parkinson's Disease Freezing of Gait Prediction competition.

Fall Risk Assessment

- Collaborated with Bioengineering researchers in analyzing the fall risk of elderly with walking sensor signal.
- Preprocessed acceleration signals by doing frequency filtering and movement type segmentation with SciPy statistical analysis methods.
- Delivered easily understandable progress updates to non-data-specialist researchers with code, word explanations, and code-generated visualization.

Badminton Coach/Software Developer ***April 2022 – Present***
Ignite Badminton Club, Coquitlam, BC

- Delivered badminton lessons to groups of 10 to 12 intermediate badminton learners.
- Developed club website using React and NodeJS framework with program information and contact, career application features.

Summer Worker ***June 2021 – September 2021***
S.U.C.C.E.S.S., Coquitlam, BC

- Organized outdoor activities for toddlers and parents and received positive feedback on program planning.
- Identified inefficiency with manual client information search in the database and created automated algorithm with Excel VBA Script that decreased search time from 30 minutes to 5 minutes.

PROJECTS

Software Developer
BlueDraw (KMUTT SIT Hackathon 2023) – MongoDB, Express, React, NodeJS *May 2023*

- A winning web app among 20 competing teams at the SIT Hackathon 2023 that allows user to draw on a digital whiteboard with free hand motions captured by the webcam.
- Implemented hand motion tracking using Google MediaPipe Computer Vision API.

- Developed digital whiteboard with Perfect Freehand NPM package.
- Created dynamic user interface using React.
- Developed RESTFUL APIs in a NodeJS + Express server to establish a social media platform with register, login, posting, and add friend functionalities.
- Used MongoDB with Mongoose framework for user information and drawing data storage.
- Implemented cookies and Jotai state container to keep track of user data after login.

Software Developer
Chat2Cart (Ignition Hack 2023) – Python Flask, React *August 2023*

- A web app that allows users to enter a description of the product they want and receive Amazon product results.
- Incorporated ChatGPT 3.5 and Amazon search API in Python Flask for product result generation.
- Created interactive chatbot and result display page with React.
- Collaborated with 3 other team members on Git.

Student Engineer
Magnetic Food Throwing Mechanism Design – Engineering Design, CAD *January – April 2023*

- Optimized food delivery process for Toronto Zoo gibbons with a magnetic food container that could be thrown to high altitudes in the exhibit.
- Communicated with the Animal Behavioural Husbandry Team at the Toronto Zoo regarding difficulties in previous feeding system to unveil the ambiguity in their problem and develop requirement table based on their needs.
- Developed CAD graphical prototypes and mathematical prototypes of throwing mechanism to communicate design specification.
- Organized separate design testing tasks for team members during prototype testing period to maximize teamwork efficiency.

Student Engineer
Simply Supported Beam Design – MATLAB *November 2022*

- Optimized the geometry of a matboard beam that is subjected to a moving train load by automating stress calculations and structural property calculations in MATLAB.
- Collaborated with a team of 4 on the hand construction of a 1.26-meter beam that supported 700 Newtons of train load (top 25% among 20 teams).

AWARDS AND CERTIFICATES

Dean's Honour List ***2022 - Present***
Awarded to students in University of Toronto Engineering for achieving over 3.50/4.00 GPA.

TensorFlow 2.0: Deep Learning and Artificial Intelligence ***September 2023***

Awarded upon the completion of the TensorFlow 2.0: Deep Learning and Artificial Intelligence course, which covers the theory of deep learning concepts and implementation of neural networks with TensorFlow.

Paulin Memorial Scholarship ***August 2023***
Awarded to students in University of Toronto Engineering with high academic achievements in their first year of study.