Michael (Wen Tao) Mo

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EDUCATION

The University of Toronto, Toronto, ON, Canada ***Class of 2026***

BASc, Engineering Science *(CGPA: 3.88/4.0)*

- *Relevant Coursework: Intro to Computer Programming in Python (A+), Data Structures and Algorithms in C (A+)*

SKILLS

- **Computer:** JavaScript, Python, C, Java, full-stack web development, NodeJS, Express, React, MongoDB, Mongoose, MATLAB, TensorFlow, NumPy, Pandas, VBA Script
- **Additional:** self-motivated, problem-solving, communication, detail-oriented, organization, time management

WORK EXPERIENCE

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

Parkinson's Disease Freezing of Gait Detection – TensorFlow, Supervised Learning

- Developed deep learning models with a transformer encoder plus bidirectional LSTM architecture in TensorFlow that detects Parkinson's disease freezing of gait events in time-series acceleration data.
- Model achieved a top 10% score in Kaggle's Parkinson's Disease Freezing of Gait Prediction competition.
- Utilize principal component analysis and clustering and EMG feature extraction techniques to generate different feature sets for model construction.
- Explore pseudo-labeling on unlabeled data and different cross fold validations to generate more robust models.

Fall Risk Assessment – TensorFlow, Unsupervised Learning

- Applied various dimension reduction and clustering techniques, such as t-SNE, K-Means clustering, and agglomerative clustering to help biological engineering researchers to cluster people under "risk" or "no risk" of falling given accelerometer time-series data.
- Conducted Fourier analysis and time-series feature extraction on acceleration data in data exploration.

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

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

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

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

PROJECTS

BlueDraw (KMUTT SIT Hackathon 2023) – MongoDB, Express, React, NextJS, CSS, HTML

- A web app 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.
- Implemented digital whiteboard using Perfect Freehand NPM package.
- Created dynamic user interface using React.
- Created NextJS RESTFUL APIs and MongoDB data storage to build a social media platform with register, login, posting, and add friend functionalities.
- Used cookies and Jotai state container to keep track of user data after login.

Simply Supported Beam Design (Team Project) – MATLAB

- 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.
- Hand-constructed a 1.26-meter beam that supported 700 Newtons of train load (top 25% of all beam designs).

Leafing NewHacks 2022 (Team Project) – Python Flask, MySQL, CSS, HTML

- A web app that allows users to enter and search for restaurants that have dietary restrictions.
- Created restaurant filters using Flask RESTful APIs and implemented MySQL database to store website information.