Mark Peng

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Education

University of Toronto — Toronto, Ontario, Canada
Honours Bachelors of Science in Computer Science — *Sep. 2024 – May 2028*

- **Activities and Societies:** UTMIST AI Open Source Developer

Technical Skills

Languages: C/C++, HTML/CSS, Java, JavaScript, Lua, Python, Ruby, Sass
Frameworks: Arduino, Django, Expo, Flask, Next.js, Node.js, React Native
Developer Tools: Android Studio, Docker, Git, PyCharm, VS Code
Libraries: Matplotlib, MongoDB, NumPy, pandas, React, Selenium, jQuery

Experience

Incoming Full-stack Developer Intern — May 2025 – Aug. 2025
Pulsenics — *Toronto, Ontario, Canada*

Software Developer Intern — Feb. 2025 – Apr. 2025
Abundant Science — *Toronto, Ontario, Canada*

- Used **React Native** and **Expo Router** to create a cross-platform **mobile app** to use **phone cameras** to detect and read lateral flow rapid test results to securely send to healthcare providers while following PHIPA regulations
- Optimized to create a **<3MB** and **<100ms** average inference time for a mobile phone **on-device machine learning** model by optimizing **TensorflowLite** image pipeline
- Created proof-of-concept vision model with **∼85% accuracy** using **Tensorflow**, **OpenCV** and **Python** for on-device automated lateral flow test detection
- Streamlined mobile app deployment by integrating **GitHub** with **Expo Application Services**, automating **CI/CD** pipelines for seamless building, testing, and over-the-air updates across development and production environments.

Front-end Developer — Jun. 2022 – Jul. 2024
Toronto Model United Nations — *Toronto, Ontario, Canada*

- Improved user engagement as measured by **2,000+** weekly visits, by designing a user-friendly website for Toronto's **largest** Model United Nations conference with over **350** sign-ups
- Delivered **consistent** and scalable content as measured by **30+** live pages, by building the site using **HTML**, **CSS**, and **Jekyll** for static-site generation
- Increased mobile registrations as measured by a **50%** mobile registration rate, by implementing responsive design for greater accessibility across devices

Projects

DIY Pump It Up | *Arduino, C/C++* — June 2024 – August 2024

- Recreated a dance arcade game, Pump It Up, creating a custom arcade game controller to interface with the game
- Utilized an **Arduino UNO** microcontroller to interface custom built pressure plates with the arcade game
- Uploaded and used **custom firmware** to properly interface over USB Serial on the Arduino UNO
- Wrote **C++ code** to communicate across the **Arduino Serial** and simulate keyboard-input

ProportionAI | *Next.JS, React, MongoDB, Terraform, Gemini API* — January 2025

- An AI-powered study app created within 72 hours for UofTHacks12, using AI to analyze and provide insights to study habits and user activity
- Web-app built using **Next.JS**, **React**, and **MongoDB** as a backend database for storing user information and insights
- Deployed using **Terraform** for IaaS through an **AWS EC2** deployment to host the study platform

Awards

University of Toronto Scholar | *Scholarship valued at $10000, awarded to 900 top students* — September 2024
Fermat Math Contest Honour Roll | *University of Waterloo, placed 100th/16189* — February 2023
Excellence in Engineering Award | *FIRST Robotics Competition* — March 2024