# Ted Zhang

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## Summary of Qualifications

- Experience in **Java**, **C++**, and **Python** through university courses, personal projects, and previous internships.
- Proficiency in **Artificial Intelligence, TensorFlow**, **Keras**, **OpenCV, Pandas**, and **Tkinter** from developing a medical diagnosis AI.
- Skilled in **Linux**, **Unix Shell Scripting**, and **Docker** from containerizing AI applications.
- Good knowledge in **AutoCAD**, **SOLIDWORKS**, and **machining aluminum** from designing various drivetrain parts for Formula Electric.
- Strong work ethic and strong analytical and problem-solving skills proven by exceptional academic performance.
- Creative and well-organized team player with a proven ability to learn new technologies quickly and work independently.

## Experience

**Artificial Intelligence Intern**, *Advanced Micro Devices, Inc. (AMD)* Jan 2022 – Apr 2022

Markham, Ontario

- Developed and trained a medical diagnosis **AI** using **TensorFlow, OpenCV, and Keras** trained on brain scans from an RSNA database of over **700,000 images** that can detect intracranial hemorrhages with **94% validation accuracy**. Utilized transfer learning using InceptionV3 as well as a custom data loader.
- Built both a CLI and GUI using **Tkinter** to display the brain scans along with their predictions in a user-friendly manner. Wrote a user guide to accompany the program.
- Containerized AMD's AI inference optimization library, ZenDNN, along with various other pretrained models using **Docker** and an Ubuntu Linux base image.
- Tailored the containers for specific models with custom **bash scripts** to run pre-set benchmarks.
- Wrote a script for, storyboarded, recorded, and edited a technical instructional video for installing and using ZenDNN in Linux.

**Tractive Systems Team Member**, *University of Waterloo Formula Electric* Oct 2021 – Apr 2022

Waterloo, Ontario

- Worked with team members to design in **SOLIDWORKS** and produce various parts of a drivetrain and battery pack for an electric race car. Independently designed a cell fuse resistance testing device in **SOLIDWORKS**.
- Prototyped and **machined** aluminum cooling vents underneath the battery of the car.
- Modified a PDU mount to include a waterproofed container for a relay in **SOLIDWORKS**.

## Relevant Projects

**Cleaning Robot** Nov 2021 – Dec 2021

- Modified a Lego EV3 robot to sweep a room automatically and avoid walls and ledges using ultrasonic, colour, and touch sensors. Programmed the robot to track itself on a cartesian plane using a C based language.

**Mastermind Artificial Intelligence** Dec 2020 – Feb 2021

- Designed and programmed the algorithm for an artificial intelligence that can play the game Mastermind with 3 levels of difficulty in Java.

**Arduino Car** Dec 2019 – Feb 2020

- Sketched, coded, and built a small, electric, keyboard-controlled car using a breadboard and Arduino chip. Gained experience soldering and using basic logic gate chips with the breadboard.

## Education

**BASc, Mechatronics Engineering**, *University of Waterloo* Sept 2021 – Apr 2026

Waterloo, Ontario

- Fall 2021 Dean's Honours List
- Relevant Courses: Algorithms and Data Structures, Digital Computation, Circuits, Linear Algebra, Calculus 1 & 2

## Awards & Certifications

**Computer Engineering Award**, *Unionville High School* Sept 2020

**PY0101EN: Python Basics for Data Science Certificate**, *IBM and edX* April 2020

- Online course in Python and data science fundamentals