

Charles Zhang

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PROJECTS (DISPLAYED ON GITHUB)

- Expensify** | *Swift, SwiftUI, Realm, Cloudkit, Git, Xcode* Apr 2025 – Ongoing
- Simple and minimal iOS personal expenses tracker
 - Uses Apple Cloudkit for native syncing on iOS devices
 - Managed version and commit history via Git
- WebGarage** | *JavaScript, CSS, ThreeJS, HTML* August 2024 – Ongoing
- Developed a web application showcasing a personal selection of vehicles in a 3D environment created with ThreeJS
 - Built webpage using HTML, JavaScript, CSS
 - Developed a UI to showcase vehicle statistics upon mouse hover
- YT Downloader** | *Python, pytube, pytubefix, tkinter, customtkinter* Dec 2024
- Developed a python application that downloads a specified YouTube video
 - Used pytube library to provide user with a selection of available formats
 - Implemented a sleek interface for easy use and aesthetics

TECHNICAL SKILLS

Languages: Swift, Racket, Java, Python, C, JavaScript, CSS, HTML
Developer Tools: Git, Zed IDE (preferred), VS Code, Visual Studio, PyCharm, IntelliJ, Eclipse
Libraries: pytube, tkinter, customtkinter, NumPy

EDUCATION

University of Waterloo Waterloo, ON
Bachelor of Mathematics *Sept. 2024 – June 2029*

EXPERIENCE

- Industrial Automation & SWE Intern** April – September 2025
Mobile Climate Control *Toronto, ON*
- Developed programs to be executed by a robotic arm for manufacturing.
 - Utilized odometry data from onboard instruments to reduce part times by up to **20%**.
 - Deployed software for embedded systems in HVAC Controllers.
 - Wrote high quality ROS, C, and Python code to support efficient parts fabrication.
- Robotics Driver/Coder/Builder** Oct 2022 – June 2024
VEX 82855G Gonk/Ghost *Richmond Hill, ON*
- Developed a **PID system** for the robot, enabling faster and more accurate movement.
 - Programmed robot in PROS, a C/C++ environment for VEX V5
 - Streamlined autonomous sequence to score **40 more points 5 seconds faster** during the Spin Up season.
 - Worked on a team of 10 members, played vital roles as Driver, Coder, and Builder
 - Developed many technologies on the robot such as the flywheel, minimal friction drivetrain, and PID system.
- Sales Team Member** December 2021 – Present
Power Unit Youth Organization *Markham, ON*
- Developed a webpage showcasing organization values and achievements
 - Managed vendor relations and booth sale logistics
 - Organized an Asian Night Market, Night It Up!, reaching **130,000 attendees** and over **\$120,000** donated to beneficiaries.