Daniel Ye

———————————— University of Waterloo Mechatronics Engineering ————————————

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SKILLS

Languages: Java, C/C++, Python, HTML, CSS, JavaScript, PHP, MySQL
Applications: Arduino, Git/GitHub, Android Studio, AutoCAD, SolidWorks

EDUCATION

University of Waterloo, Waterloo, ON   Sep 2020 – May 2025 (Expected)
- Candidate for Bachelor of Applied Science in Mechatronics Engineering (4.0 Term GPA)
- Coursework: Algorithms and Data Structures, Circuits, Digital Computation

RELEVANT EXPERIENCE

Firmware Developer – *University of Waterloo Midnight Sun Solar Car Team*   Sep 2020 – Present
- Programmed firmware in C to control GPIO pins and send messages over a Controller Area Network (CAN)
- Programmed Python scripts to trigger firmware I2C readings and process the data received over CAN
- Validated the functionalities of the modules by writing comprehensive unit tests

Lead Programmer – *FIRST Robotics Competition Team 4015*   Sep 2018 – Jun 2020
- Designed the intake system which greatly increased ball collection efficiency and reduced effort for drivers
- Developed joystick teleoperated controls and autonomous movement, intake, and shooter functionalities based off sensory feedback that improved maneuverability and decreased cycle times by 50%
- Implemented real-time camera vision processing to automatically align the robot with the target using a control loop, which increased its speed and accuracy by 80%, scoring more points

Club Founder and President – *St. Joseph Secondary School Computer Science Club*   Jun 2018 – May 2020
- Taught a group of 20+ students algorithms, data structures, and Object-Oriented Programming in Java
- Prepared and presented lessons on programming concepts, answered homework questions, and organized contests to engage students and improve their performance in the Canadian Computing Competition

PROJECTS

Personal Portfolio Website (danielye.me) – HTML, CSS, JavaScript, PHP, MySQL   Dec 2020 – Jan 2021
- Designed a responsive personal website/online portfolio to host and showcase projects
- Implemented a to-do list feature that stored user's items in a database using PHP and MySQL

Self-Balancing Robot – Arduino, MPU6050, C/C++   Dec 2020 – Jan 2021
- Built and programmed a two wheel robot capable of self-balancing using readings from a MPU6050 IMU
- Tuned PID control loop to drive the motors based off of sensor readings

Pipe Dodger Android Game – Java, Android Studio   Nov 2019 – Dec 2019
- Designed an interactive and scalable Android game available on the Google Play Store with 50+ downloads
- Implemented storage of local data to keep track of scores and points to purchase in-game cosmetic items

AWARDS

Hack the Hammer Winner (Face the Police Project) – Python   Feb 2018
- Awarded 2nd place for creating a Python facial recognition program to automatically detect and identify subjects on camera by matching their facial features to locally stored database of images
- Developed motion tracking functionalities and displayed the subject's information on a graphical interface