John Doe

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Education

Harvard University Anticipated May 2027
Bachelor of Arts in Computer Science, Neuroscience, and Economics *Cambridge, MA*

X High School June 2023
High School Diploma – GPA: 3.9/4.0 *Philadelphia, PA*

- Relevant Coursework: Discrete Mathematics at Community College of Philadelphia, Multivariable Calculus at University of Pennsylvania, AP Computer Science A

Skills

Programming: Python · Java · C/C++ · ROS · SQL · JavaScript · HTML/CSS · LaTeX
Software Tools: OnShape · Fusion360 · KiCad · Git · Linux · Adobe Suite
Libraries: TensorFlow · OpenCV · pandas · NumPy · Matplotlib · PIL
Languages: English (Native) · Fuzhounese (Native) · French (Conversational) · Mandarin Chinese (Beginner)

Experience

Programming Lead/Marketing & Fundraising Manager Sept. 2019 — June 2023
School Robotics Team *Philadelphia, PA*

- Developed comprehensive documentation for team's codebase using GitBook to streamline the onboarding process for new team members
- Utilized Java and OpenCV to program robot's autonomous and teleop code, incorporating AprilTag detection
- Oversaw team of 5 in rebranding, designing a new website, and creating a new logo to better convey team's values
- Reached FTC Pennsylvania Championship in 2023

Robotics Research Assistant June 2022 — Aug. 2022
GRASP Lab at University of Pennsylvania *Philadelphia, PA*

- Researched extrinsic contact estimation for robotic manipulation to advance the field of general-purpose robotics
- Developed a Python script to generate heightmaps for environments in Gazebo simulator, enabling creation of diverse training data
- Created realistic simulations of objects on a desk using procedural generation techniques, allowing for practical scenarios and real-world testing
- Provided visualization tools in RViz that facilitated understanding of robot's current and target positions, aiding in error analysis and fine-tuning of robotic movements

Projects

Trash Collector | *Java · Python · TensorFlow · pandas · CAD · Git* May 2023

- Developed a robot that can autonomously collect trash and sort it into recyclables and non-recyclables
- Utilized TensorFlow to train an object detection model to detect trash and recyclables
- Implemented a PID controller to control robot's movements
- Worked with a team of 7 using Git for version control, enabling efficient and organized collaboration

RoboDog | *C · Java · Arduino · CAD · KiCad* June 2022 — Dec. 2022

- Built a robot guide dog to assist visually impaired for MIT Online Science, Technology, and Engineering Community (MOSTEC) 2022 Capstone Project
- Implemented a communication system using Bluetooth to establish a connection between robot and an Android phone, allowing for real-time exchange of GPS coordinates and goal information
- CADed using OnShape to design robot's chassis
- Employed KiCad to map out schematics and for Arduino-based control systems

Awards and Honors

2023 Wharton Global High School Investment Competition Semifinalist: Selected as one of 55 teams out of rougly 1,400 teams competing in 53 countries for creating a unique investment strategy and portfolio for a fictitious client

2023 MathWorks Math Modeling Challenge Second Round Qualifier: Top 25% of submissions, implementing a Vector Autoreggresion (VAR) model to predict future sales of e-bikes