Darren Dong

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EDUCATION

University of Michigan, Ann Arbor, MI **August 2022 - May 2026**
Bachelor of Science in Engineering in Computer Science with a Minor in Electrical Engineering
GPA: 3.85/4.0
Courses: Data Structure and Algorithms, Computer Vision, Artificial Intelligence, Machine Learning, Web Systems, Practical Data Science, Advanced Operating System, Natural Language Processing, Computer Security, Signal and Systems

EXPERIENCES

Keurig Dr Pepper, Frisco, TX
IT Automation Prompt Engineering Intern **June 2025 - August 2025**
- Designed and implemented AI-driven automation solutions using GenAI platforms like Microsoft Azure to streamline IT workflows, including manual data entry and language translation, improving cost and time efficiency
- Analyzed cross-departmental support processes to identify high-impact automation opportunities, developing and testing proof-of-concept tools that enhanced the speed and accuracy of routine IT services.
- Collaborated in agile development cycles with engineers and product owners through sprint planning, daily stand-ups, and demos, iteratively refining automation prototypes based on real-time feedback.
  Presented functional GenAI prototypes and impact analyses to senior IT leadership, influencing future automation roadmaps and delivering scalable AI frameworks spanning multiple IT domains.

University of Michigan - Michigan Drone Technology, Ann Arbor, MI **August 2023 - May 2024**
AI Subteam Lead
- Led the AI subteam, achieving near-perfect attendance in both in-person and virtual meetings with other subteams. Delivered clear presentations on AI subteam goals and updates, fostering effective communication and driving progress toward drone enhancement.
- Collaborated closely with subteam members to select hardware components and software frameworks for the drone, carefully weighing factors such as cost, weight, and complexity. Established a strategic roadmap for future growth, aligning with the club's vision for developing an autonomous drone.
- Developed an initial neural network framework, setting the stage for clean, scalable code development by the team. Configured a Raspberry Pi 4 microcontroller to support this work, including enabling campus WiFi access and installing essential tools like Visual Studio Code and PyTorch.

PROJECTS

SLAM and Navigation of a Two-Wheeled Robot **January 2024 - April 2024**
- Developed an action model, sensor model, and particle filter utilizing LIDAR sensing and odometry to autonomously navigate a two-wheeled robot through a maze. Employed the A* path planning algorithm for efficient exploration and obstacle avoidance, enabling safe and effective traversal of unknown areas.
- Implemented a bang-bang feedback controller for basic movements—forward, backward, left, and right. Tuned the robot's motors using PID controls to ensure accurate odometry values and mitigate nonsystematic errors, achieving a pose error within 10cm and 30°.
- Visualized odometry, particle filter, and robot pathing in real-time using RViz. Integrated LIDAR rays and the wave planner algorithm to generate and update a detailed map, highlighting unexplored frontiers. This provided a clear and dynamic representation of the robot's position, movements, and sensing capabilities.

Object Detection and Classifications **March 2024 - April 2024**
- Implemented the YOLOv8 model for efficient multi-object detection, focusing on five fruit classes using a Kaggle dataset. Achieved bounding box detection and confidence levels up to ~90%.
- Developed and trained a custom 2-layer neural network model for offline object classification of various clothing types from the FashionMNIST dataset, achieving over 85% training and validation accuracy with minimal training.
- Conducted a research-driven analysis to implement a fusion model based on EmotionNet and Central Binary Local Pattern (CBLP) algorithm. Achieved 50% accuracy with EmotionNet and 33% with the CBLP algorithm for emotion recognition.

SKILLS

Programming Languages: C++, Java, Python, JavaScript, HTML, CSS, Dart, SQL
Frameworks/Libraries: Git, Github, PyTorch, Numpy, Matplotlib, OpenCV, Pandas, PyTorch, Flutter, Jinjia, Flask, React