

AASHISH HARISHCHANDRE

aashish0415@gmail.com | 269-808-7710 | linkedin.com/in/aashish-harishchandre/ | github.com/AashishH15 | aashishharishchandre.netlify.app/

EDUCATION

Michigan State University

Master of Science - MS in Computer Science and Engineering

August 2025 - May 2027

Michigan State University - Dean's List

Bachelor of Science - BS in Computer Science and Engineering, Business Minor

August 2022 - May 2025

EXPERIENCE

Drone Research and Intelligent Flight Technology, *Software Robotics Engineer*

September 2025 - Present

- Building simulations for the **NASA-grant-funded** project, Laser Energized Aerial Drone System (LEADS), to demonstrate effective **LiDAR** data filtering in smoky environments for persistent aerial wildfire monitoring.
- Develop autonomous vertical take-off and landing (VTOL) drones systems as part of a 3x NASA award-winning team, using **ROS (Robot Operating System)** and **Gazebo** simulations.

D-CYPHER Lab, *Graduate Research Assistant*

June 2025 - Present

- Build simulation environments for automated scenario generation and **reinforcement learning (RL)** policies for autonomous multi-vehicle communication and cooperative exploration.
- Apply predictive data analytics and **Model Predictive Control (MPC)** to manage non-linear system dynamics, transforming raw simulation data into optimized control strategies for risk-aware navigation.

AI Club at MSU

October 2023 - Present

Grad Advisor (05/2025 - Pres.), Workshop Director (05/24 - 05/25), Project Manager (Oct '23 - May '24)

- Served as Workshop Director, researching and delivering **15+ technical presentations** on AI topics; including **LLMs, RAG, multimodal AI, RL, and AI ethics** to an active community of **280+ engaged members**.
- Directed production of written summaries and slide decks for each session, covering tools such as **HuggingFace, AutoGen, OpenAI APIs**, and open-source frameworks.

Volkswagen of America (Capstone), *Software Developer*

January - May 2025

- Built SafeJourneyAI, an AI-powered navigation app for **Android and Android Auto** in **Kotlin**, integrating the **Mapbox SDK** to deliver real-time turn-by-turn routing.
- Developed a **Python ML** backend to predict route safety scores in real time, processing live **OpenWeatherMap API** data to dynamically factor road and weather risk into routing decisions.

Michigan State University College of Engineering, *Teaching Assistant*

August 2024 - May 2025

- Supported instruction for an Object-Oriented Software Design course taught in **C++**, covering UML modeling, design patterns, software engineering principles, and file I/O across two semesters, combined enrollment of **600 students**.
- Held weekly office hours helping students debug C++ programs and complete step-based projects, including multi-class inheritance hierarchies, animation systems, and full software design exercises.
- Graded student submissions for design correctness, code quality, and adherence to **OOP principles** such as encapsulation, polymorphism, and abstraction.

PROJECTS

End-to-End Playing Card Classification

March - May 2025

- Co-authored a research paper comparing a **Feedforward Neural Network (58.2% accuracy)** and a **Sequential Convolutional Neural Network (64.1% accuracy)** for playing card classification across **8,000+ images** spanning diverse card designs, orientations, and cultural styles.
- Implemented both models in **Python** using **PyTorch** within Jupyter Notebooks; used **RReLU** and **ReLU** activation functions, cross-entropy loss, and **SGD**; trained **FNN** for 1,000 epochs and **CNN** for 200 epochs.

McByte — *Awards: Best Interactive Media | Best Interactive Visualization | SpartaHack 9* January 2024

- As Team Lead & Backend Developer, won two award tracks at SpartaHack 9 by building an interactive platform that teaches economic principles, Purchasing Power Parity and the Big Mac Index, through real-time data-driven animations.
- The backend was developed in **Python with Flask** and built dynamic, interactive map and chart visualizations using **Plotly, Folium, and GeoPandas**; rendered the frontend with **HTML/CSS/JavaScript**.

CrowdSecure — *Best Cybersecurity Hack | MHacks16* | Team Lead & Blockchain Developer

November 2023

- Won Best Cybersecurity Hack at MHacks16 by building a **Web3** crowdfunding platform that ensures transparent donation tracking and democratized fund allocation using **Bitcoin's quadratic funding** model.
- Developed the frontend and matching-fund logic in **Python** using **Streamlit and Plotly**; integrated the blockchain transaction layer in **Node.js** using the **Hedera Hashgraph SDK** to securely process decentralized donations.

TECHNICAL SKILLS

Databases: SQL, MongoDB, MySQL, NoSQL

Machine Learning: PyTorch, LLMs, RAG, Computer Vision, Deep Learning, Prompt Engineering, GANs, NLP, TensorFlow, OpenCV, NumPy, Pandas, Lambda

Languages: C++, Python, Kotlin, JavaScript, Solidity, C, Rust, Java, JSON, C#

Tools: ROS, Gazebo, Jupyter, Git, Docker, React, XML, Excel, Outlook

Cybersecurity: Blockchain, Public-Key Cryptography, TLS Handshake, Operating Systems, Linux, UNIX, Vim

Web Development: HTML, CSS, Flask, FastAPI, Google Cloud, Web services, Full stack