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EDUCATION

Johns Hopkins University

B.S. in Computer Science

Baltimore, Maryland, USA

Dean's List | Expected 2029

- Relevant course work: Data Structures, Computer System Fundamentals, Intermediate Programming (C/C++), Calculus III (Multivariable Calculus), Linear Algebra for Data Science, Probability, Gateway Computing Java, Discrete Mathematics

PROFESSIONAL EXPERIENCE

Johns Hopkins University

Teaching Assistant

Baltimore, USA

Aug 2026 - Present

- Developed section worksheets for EN.553.171: Discrete Mathematics, graded homework with feedback on proof structure and mathematical correctness, and held weekly office hours to guide students through logic, combinatorics, modular arithmetic, and graph theory.

Optivoy

AI Engineering Intern

Delaware, USA

May 2026 - Aug 2026

- Built and deployed custom Python **MCP** servers for Gmail, Microsoft Graph, LiteAPI, and weather services, enabling autonomous retrieval of users' travel history, loyalty memberships, live flight options, and destination forecasts
- Developed a **LLM**-backed travel optimization assistant with access to search tools, users' past trips, calendar and loyalty info, allowing users to refine recommendations conversationally based on schedule, rewards, and personal preferences

MatryxSoft Technologies

Software Engineering Intern

Bengaluru, India

Mar 2025 - May 2025

- Trained a real-time object detection model using YOLOv8 (Ultralytics) and Roboflow to classify **2,000+** beverage categories
- Engineered an automated data pipeline using Python and the YouTube Data API to extract video captions and structure content for website generation, reducing manual data collection time by **10+** hours
- Built a computer vision solution using **OpenCV** to detect vacant shelf regions based on bounding box dimensions and spatial constraints

CollegeSource

Intern

Bengaluru, India

Mar 2025 - Aug 2025

- Automated the creation and maintenance of a structured database of **436+** U.S. universities by scraping and aggregating data using Python, **BeautifulSoup**, and **OpenPyXL**. Collected and organized metrics, including acceptance rates, student-faculty ratio, average class size, tuition and fees, graduation rates, SAT/ACT ranges, popular majors, rankings, and notable alumni, and exported cleaned datasets into dynamically formatted Excel workbooks, saving **30+** hours of manual research and entry

CLUBS

Johns Hopkins URC Mars Rover Club

Member

Baltimore, Maryland

Aug 2025 - Present

- Trained and deployed a **YOLO** model to enable the rover to detect a physical keyboard in real-time
- Built a complete **ArUco** calibration and position estimation pipeline to localize the keyboard and guide a mechanical arm
- Developed **ROS** publishers and subscribers nodes and automation scripts to coordinate camera feed and arm movement

PROJECTS

Gaussian Periods Visualizer (Collaboration with Mathematics Professor)

May 2026 - Present

- Built a **JavaScript** Gaussian periods visualizer using **Web Workers**, **Float64Array**, and zero-copy buffer transfers; precomputed trigonometric tables reduced sine/cosine evaluations from **O(nd)** to **O(n)** for multiplicative order d
- Engineered adaptive **Canvas 2D** rendering with pixel mode above **8,000 points**, spatial hashing querying **9 neighboring cells**, and **requestAnimationFrame** playback; implemented color-class filtering, and **CSV/PNG** exports ([link](#))

Algorithmic Trading System

Feb 2026 - Mar 2026

- Built and deployed a fully autonomous paper trading system in Python, integrating a custom Multi-Layer Perceptron trained on **18** engineered technical indicators (RSI, MACD, Bollinger Bands, ATR) to predict short-term stock price movements, achieving a **60.7%** win rate and **16.91%** return across **576** trades in backtesting
- Designed a trading pipeline with real-time market data, **MySQL** trade logging, position management (stop-loss, take-profit, 5-hour market-time holds), and continuous **24/7** operation with automatic market open/close scheduling

ModularNeuralNetwork

Apr 2025 - May 2025

- Built a fully customizable **Multi-Layer Perceptron (MLP)** architecture model from scratch using **NumPy**, supporting configurable input dimensions, arbitrary hidden layer depths, customizable neuron counts, and pluggable activation functions
- Implemented forward propagation, backpropagation, gradient descent optimization, and cross-entropy loss, achieving **97.01%** accuracy on a binary classification dataset. (Reimplemented network architecture from scratch in **C++**)

TECHNICAL SKILLS

- Programming Languages: Python (NumPy, Pandas, OpenCV), C++, C, Java, SQL (MySQL), JavaScript, HTML, CSS
- Tools & Software: Git, VS Code, ROS2, Bash, API Integrations, Model Context Protocol (MCP) Servers, LaTeX, Linux