Varsha Rajesh

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Education

University of Michigan, Ann Arbor, College of Engineering Expected Graduation: Apr 2027
Bachelor of Science in Engineering GPA **3.92/4.00** Data Science Major, Mathematics Minor

- Honors: **Engineering Scholarship of Honor**, Three Semester **Dean's List Recipient**
- Relevant Coursework: Data Structures and Algorithms, Computational Methods in Statistics and Data Science, Applied Regression Analysis, Introduction to Statistical Computing, Discrete Mathematics, Database Management Systems

Technical Expertise

Python, R, SQL, C++, Pandas, NumPy, Scikit-learn, TensorFlow, PyTorch, CVAT, Jupyter Notebooks, Privacy-Preserving Data Handling, Predictive Modeling, A/B Testing, Hypothesis Testing, Time Series Analysis, Exploratory Data Analysis, Microsoft Office, Feature Engineering, Classification and Regression Models, Data-Driven Decision Making

Work and Project Experience

Surgical Data De-Identification Research Assistant July 2025 – Present
Michigan Medicine, Department of Cardiac Surgery and Robotics Ann Arbor, MI

- Prepared and **de-identified sensitive clinical data** to enable privacy-preserving deployment of **AI models** in healthcare.
- Built **high-quality labeled datasets** supporting AI-driven analysis of cardiac surgery procedures in **ongoing clinical trials**.
- Improved **annotation efficiency** through close collaboration with researchers, accelerating safe and reliable **AI model training**.

Alzheimer's MRI Classifier Project Team Member Sept 2025 – Dec 2025
Michigan Data Science Team Ann Arbor, MI

- Co-led a **7-member team** developing deep learning models for early Alzheimer's detection from brain MRI scans, achieving **90.4% classification accuracy** with custom CNNs.
- Fine-tuned **VGG-16 and ResNet-50** architectures and designed **ensemble strategies** to improve predictive robustness.
- Applied **Grad-CAM interpretability techniques** to validate model decision-making in clinically relevant brain regions.
- Designed and deployed a **full-stack web application** enabling real-time MRI uploads, model predictions, and comparison against **ground-truth labels**.

Assessing Bioinformatics Capabilities of OpenAI GPT Research Assistant Aug 2024 – Apr 2025
University of Michigan Medical School, Department of Learning Health Sciences Ann Arbor, MI

- Led a benchmark evaluation of **GPT-3.5, GPT-4o, and LLaMA-3-70B** across **104 bioinformatics tasks**, comparing outputs against **110–68,760 human solvers per task**.
- Built an **end-to-end evaluation pipeline** in Python and R, identifying systematic failure modes in the various models.
- Demonstrated strong alignment between **LLM performance and human task difficulty**, with models achieving **up to 58% accuracy**; results under peer review and presented at a research symposium.

Stock Market Simulation Sept 2025 – Oct 2025
Data Structures and Algorithms, EECS281 Ann Arbor, MI

- Built a production-style **C++ electronic exchange** processing **tens of thousands of orders**, implementing price–time priority matching with **O(log n)** execution.
- Implemented **real-time analytics** over streaming trade data, including median prices, trader summaries, and optimal time-traveler profit scenarios.
- Validated **correctness and performance** under adversarial workloads, meeting strict runtime and memory constraints.

Co-Curricular Involvement

Predicting Economic Values Project Lead Dec 2025 – Present
Michigan Data Science Team Ann Arbor, MI

- Led an **end-to-end economics data science project** for a **16-student team**, covering the full lifecycle from raw data extraction to predictive modeling and presentation.
- Developed a **structured curriculum** spanning EDA, SQL data cleaning, feature engineering, and regression modeling.
- Guided students through **Python-based regression**, train–test splits, correlation analysis, and data storytelling.

Finance and Budgeting Lead June 2025 – Present
Michigan Data Science Team Ann Arbor, MI

- Managed and audited finances for a multi-project student organization, maintaining **100% budget accuracy** across semesters.
- Designed **Power BI dashboards** with live data gateways, enabling budget monitoring and reducing reporting overhead.
- Partnered with leadership to inform **funding decisions** using data-driven budget insights.

Board Member and Community Involvement Subcommittee Member Aug 2024 – Present
Michigan Engineering Student Advisory Board Ann Arbor, MI

- Collaborated with faculty to represent student needs, bridging **technical, academic, and community priorities**.
- Provided **data-informed strategic input** on policy and program development to increase cross-group engagement.