Tanisha Ravindran

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EDUCATION

Iowa State University – College of Liberal Arts & Sciences (LAS) **Ames, Iowa**

Bachelor of Science in Computer Science (Honors), Minors in AI & Data Science **Expected: May 2028**

Awards: LAS Dean's High Impact Award for Undergraduate Research, D4 Scholar Award

Clubs: AI-ML Club, Google Developer Student Club, Women in Science and Engineering, Computer Science Club

TECHNICAL SKILLS

Java, Python, Spring Boot, PostgreSQL, HTML, React, Node.js, Vue.js, Pytorch, JavaScript, REST API's, Microsoft PowerApps, MongoDB, Kotlin, Large Language Models, Data Analysis, Machine Learning, Artificial Intelligence.

WORK EXPERIENCE

Software Engineer Intern – Alstom **June 2025 - August 2025**

Internship

- Contributed to the Alstom Reliability & Availability Monitoring Intelligent System (ARAMIS) project, enhancing a Java Spring Boot application through feature implementation, documentation, and team collaboration.
- Built Phase 1 of the DevX internal tooling application using Microsoft Power Apps by designing data models, automating multi-step workflows, and integrating department-specific forms—reducing manual reporting time and improving cross-team operational efficiency.
- Developed a DevOps onboarding module by documenting Alstom-specific CI/CD and workflow processes, creating step-by-step guides that accelerated new engineer ramp-up and standardized development practices across teams.

RESEARCH EXPERIENCE

Undergraduate Research Assistant – Department of Computer Science **August 2024 – Present**

What are the Capabilities and Pitfalls of LLM on Integral Calculus Problems with Zero-Shot Reasoning?

- Leading and conducting independent research on Large Language Models (LLMs) while mentoring undergraduate students, focusing on evaluating LLMs' zero-shot reasoning on integral calculus problems.
- Designed and executed benchmarking experiments to evaluate accuracy, robustness, and error patterns using data analysis and automated testing pipelines based on a custom evaluation framework and grading scale.
- Applying findings to improve reasoning reliability in AI-assisted problem-solving and adaptive learning systems; presented results at the ***National Conference on Undergraduate Research*** (NCUR) 2025 held in Pittsburgh.

Beyond Single Plots: A Benchmark for Question Answering on Scientific Multi-Charts **Summer 2025**

- Assisting in leading the human validation process for *PolyChartQA*, a benchmark evaluating how AI models reason over multiple charts in complex question-answering tasks, ensuring rigor and reliability in the dataset.
- Independently validating GPT-4 predictions for question difficulty (easy/medium/hard) against a predefined rubric to establish consistency and eliminate labelling bias.
- Categorizing questions into structural, data retrieval, and reasoning types, strengthening the benchmark's robustness, and enabling downstream applications in anomaly detection for data-heavy systems.

LEADERSHIP EXPERIENCE

LAS Ambassador - Computer Science Department **August 2025 - Present**

- Represent the Computer Science Department as an LAS Ambassador to prospective and current students, providing guidance on academic programs and campus resources. Support outreach initiatives and departmental events to promote community engagement and student success.

Peer Mentor - Computer Science Department **August 2025 – December 2025**

- Mentor a cohort of 20 first-year Computer Science students in Com S 1010, supporting their academic success and campus adjustment. Guide students through one-on-one mentoring, lead discussions on study habits and academic planning, and organize group activities to build teamwork and connect them with campus resources.