

Vikas Reddy

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EDUCATION

Johns Hopkins University

Jan '25 – May '26

Master of Engineering in Computer Science

Relevant Coursework: Machine Learning, Deep Learning, Cloud Computing, Software System Design, Machine Translation

University of Maryland - College Park

Aug '21 – Dec '24

Bachelor of Science in Computer Science

Relevant Coursework: Object-Oriented Programming, Algorithms, Advanced Data Structures, Artificial Intelligence, Computer Vision, Data Science, Computer Architecture, Programming Handheld Systems, Web Application Development

Certifications: AWS Solutions Architect – Associate (SAA-C02) | Microsoft Azure Fundamentals (AZ-900)

WORK EXPERIENCE

Vector Institute for Artificial Intelligence

May '25 – Present

Full-Stack Software Engineer

- Engineering multi-agent AI research platform proving collaborative reasoning degrades LLM performance as models prioritize consensus over correctness.
- Developing full-stack research system using Next.js, Node.js, PostgreSQL, and Python FastAPI analyzing 200+ multi-agent conversations across MMLU, GSM8K, and CommonSenseQA benchmarks.
- Designing conformity analysis system with interactive visualizations revealing when agents modify responses during multi-agent debates, disproving the assumption that stronger models correct weaker ones.

JHU Intelligent Systems and Language Engineering Lab

Jan '25 – May '25

Research Assistant

- Built research platform with chatbot/voicebot interfaces to study selective exposure bias and echo chamber formation in LLM-driven information foraging tasks.
- Architected microservices using Node.js/Express.js with MongoDB, RabbitMQ message queuing, and Pinecone vector database.
- Conducted user studies analyzing responses to biased information delivery, processing behavioral data from 115 participants.

UMD Computational Sociodynamics Lab

Aug '23 – Jan '25

Research Assistant

- Developed AT Protocol client consuming Bluesky firehose, cross-referencing 1M+ daily news shares against NewsGuard ratings.
- Built analytics dashboard using Shiny for Python and PostgreSQL to visualize news source reliability and engagement patterns.
- Deployed FastAPI application on RapidAPI marketplace providing third-party access to news source credibility analysis tools.

VoicePing

May '23 – Aug '23

Data Scientist Intern

- Fine-tuned OpenAI Whisper to enhance real-time speech-to-text transcription accuracy for Japanese and Vietnamese.
- Achieved significant accuracy improvements, achieving a word error rate of 6.97% for Japanese and 7.33% for Vietnamese.
- Conceptualized, designed, and developed a cutting-edge prototype web application utilizing FastAPI, Next.js, and Firebase.

PROJECTS

NipponSky - Topic Mining of All Japanese Bluesky Posts in 2024

May '25

- Built end-to-end Japanese text topic analysis system using BERT embeddings, K-means clustering, and Fugashi tokenization.
- Implemented automated cluster optimization with silhouette score, Calinski-Harabasz index, and Davies-Bouldin metrics.
- Designed visualization suite with 2D/3D plots, network graphs, and Japanese word clouds using matplotlib/Plotly/UMAP.

mani.ai - Financial Chatbot

Aug '24

- Developed a financial chatbot with GPT-4o mini and Gemini API to assist with budgeting, investments, and financial planning.
- Built the conversational interface using Next.js and Tailwind CSS, with Supabase handling chat history storage and sharing.
- Gathered feedback through user testing with 20+ participants and implemented iterative improvements from their suggestions.

UMD Hack4Impact - Student organization that builds software for nonprofits

Sep '22 – May '23

- Developed a student tutoring management portal for RISE DC, a non-profit providing educational services to 3000+ low-income youth in Washington, DC, using React.js, Typescript, and Firebase.

SKILLS

Programming Languages: Java, Python, C, JavaScript, Typescript, PHP, Dart, HTML/CSS, SQL

Frameworks/Services: AWS, Azure, GCP, Docker, Firebase, React.js, Next.js, Express.js, JUnit, Git, GitHub, Linux

Spoken Languages: English, Japanese, French, Telugu