Ritesh Thipparthi

College Park, MD | 240-351-6774 | rthippar@terpmail.umd.edu | linkedin.com/in/rthipparthi | github.com/ritesh3280

EDUCATION

University of Maryland — College Park, MD
Bachelor of Science in Computer Science — Aug 2023 – May 2027
Relevant Coursework: Object-Oriented Programming, Data Structures & Algorithms, Introduction to Computer Systems, Discrete Structures, Programming Languages & Paradigms, Introduction to Data Science

TECHNICAL SKILLS

Languages and Technologies: Java, Python, JavaScript, C, HTML, CSS, SQL, MongoDB
Tools and Frameworks: React, Flask, Node.js, Express, LangChain, Tailwind CSS, Git

PROJECTS

[Orbital Finance - 2nd Place at HackPrinceton](#) | *React, Flask, RealTime API, Twilio, LangChain*
- Engineered an AI-powered voice assistant using OpenAI's Real-Time API and Twilio WebSocket for natural financial conversations
- Developed a Natural Language to SQL pipeline enabling users to query complex customer databases using conversational language
- Built a RAG system using Pinecone, LangChain, and PyTorch to transform raw financial data into actionable insights

[Vector Mentor - 1st Place at HackUMBC](#) | *React, Flask, Python, Pinecone, LangChain, PyTorch*
- Created an educational platform that integrates with Canvas API to provide personalized study recommendations
- Engineered a multi-agent architecture using LangChain for processing course content and generating study materials
- Designed and implemented a responsive UI with React and Tailwind CSS for seamless user experience

[MoneyMap](#) | *React, Node.js, Express, MongoDB*
- Developed a full-stack expense management application with secure JWT authentication
- Implemented advanced transaction filtering and real-time updates using MongoDB
- Built interactive data visualizations using React with Redux and React Query for state management

RESEARCH EXPERIENCE

Student Researcher - FIRE Climate Computing — Aug 2024 – Dec 2024
University of Maryland — *College Park, MD*
- Engineered simulations of Hurricane Ida using the WRF model and Python to analyze SST impacts, processing meteorological datasets spanning 1,600 x 1,600 km with 4 km grid spacing
- Developed data processing pipelines using Python and NetCDF operators with NCEP/NCAR Reanalysis datasets to compute and visualize time-averaged difference fields across atmospheric variables
- Leveraged high-performance computing systems (NCAR Derecho) to run parallel simulations analyzing Ida's behavior under varying sea surface temperature conditions

WORK EXPERIENCE

Community Assistant — Aug 2024 – Present
University of Maryland — *College Park, MD*
- Provide 24/7 support and ensure safety for over 500 residents at La Plata Hall
- Coordinate with local authorities and residence assistants for emergency response and crisis management
- Develop and maintain digital systems for tracking resident requests and resource allocation

Front-End Software Engineer Intern — Jun 2022 – Jul 2022
Gradvine — *Hyderabad, India*
- Developed responsive web interfaces using HTML, CSS, and JavaScript for improved mobile user experience
- Collaborated with UX designers and backend developers to implement optimized user interfaces
- Applied front-end best practices including semantic HTML and accessibility standards