Swetha Tripuramallu

Cary, NC | swetha.tripuramallu@gmail.com | www.linkedin.com/in/swetha-tripuramallu | github.com/swethatripuramallu

OBJECTIVE

Aspiring to secure a full-time position in Artificial Intelligence by utilizing skills in software engineering, AI modeling, and game development to create cutting-edge solutions that address complex challenges and contribute to the advancement of technology.

EDUCATION

Purdue University **West Lafayette, Indiana**

Bachelor of Science, Computer Engineering (BSCmpE) *Expected Graduation, May 2025*

- **Concentration:** Artificial Intelligence and Machine Learning
- **Relevant Coursework:** Artificial Intelligence and Machine Learning (Masters), Reinforcement Learning (Masters), Data Mining (Masters), Open-Source Software Senior Design (AI and ML Frameworks), Object Oriented in Java

EXPERIENCE

SAS **Cary, North Carolina**

Software Computer Vision AI Modeling Intern *May 2024 – Aug 2024*

- Crafted player-facing AI behaviors using behavior trees to randomize NPC interactions in factory environments
- Designed realistic simulations Unreal Game Engine with moving conveyor belts to utilize game methodologies such as the Actor + Component model, Singletons, and data-driven design to generate training data for computer vision models to improve AI accuracy by reducing 20% of reportable physical accidents near conveyor belts
- Resolved scripting logic issues using Unreal Engine's level editor, animation, and Sequencer editors, with C++ programming

Software Artificial Intelligence Intern *Nov 2023 – May 2024*

- Collaborated closely with the team to develop modular documentation for the Sketch large language model package in Python to optimize code readability by providing detailed API references and inline code examples.

Software Data Visualization Intern *May 2022 – Oct 2023*

- Enhanced the user interface of SAS Nova Commons by implementing React hooks, functional components, and class components, leading to a reduction in development time and increased user engagement..
- Created a URL-switching feature and a content locations wrapper enabling users to select URLs from the SAS database to visualize specific code in HTML and its conversion to React code.

Purdue University **West Lafayette, Indiana**

Virtual Reality Research Assistant *Sept 2023 – Dec 2023*

- Discussed and prioritized high-demand issues on multithreading and concurrent request handling as well as guided the integration of quaternions and Euler angles for 3D positioning, which resulted in an increase in system efficiency

PROJECTS

Custom Playlist Tune Timer **West Lafayette, Indiana**

Student Project Developer *May 2024 – December 2024*

- Designed a full-stack iOS application using React Native with TypeScript and a Flask backend, enabling seamless user interactions with Spotify's Web API for dynamic playlist creation and management.
- Implemented RESTful HTTP endpoints in Flask to handle Spotify API integrations, including OAuth authentication, playlist creation, playback control, and user-specific recommendations based on real-time mood and duration inputs.
- Optimized back-end scalability by modularizing Spotify API interactions and implementing cache-backed data retrieval, reducing API latency and enhancing user experience during high-volume operations.

Adaptive Power Flow Control with Deep Reinforcement Learning **West Lafayette, Indiana**

Student Project Developer *September 2024 - December 2024*

- Developed a scalable DRL-based framework using Pytorch and Proximal Policy Optimization (PPO) to optimize control strategies for renewable energy sources and battery systems in stochastic power grids.
- Implemented actor-critic neural networks with multi-layer perceptrons, leveraging reward rescaling, gradient clipping, and Adam optimization for stable policy updates and value estimation.
- Formulated the OPF problem as a Markov Decision Process (MDP), implementing custom state-action evaluations penalizing power losses, voltage violations, and SOC deviations to ensure grid stability.

Data Analysis and Predictive Modeling in Python **West Lafayette, Indiana**

Student Project Developer *August 2022 – December 2022*

- Optimized real-world educational datasets using linear and logistic regression, and K-Nearest Neighbors (KNN) to accurately predict outcomes and improve model accuracy 20% through iterative testing and parameter tuning

SKILLS

Programming Languages: MATLAB, C/C++, C#, JavaScript, Java, Python, React.js, Typescript, React Native, Flask
Tools: Pytorch, IntelliJ, Visual Studio, Jupyter Notebooks, GitHub, Git, Gerrit, Vim, TensorFlow, Unreal Engine 5, Docker