Sri Ujjwal Reddy Beereddy

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Education

Arizona State University (4.0 GPA) Tempe, AZ
Bachelor of Science in Computer Science (Software Engineering), Minor in Entrepreneurship *Aug 2022 – May 2026*

Experience

Software Engineering Intern (Machine Learning) Jul 2024 – Present
Geometric Media Lab *Tempe, AZ*

- **Engineered** a hybrid ML pipeline by combining k-means clustering with a supervised neural network for gunshot detection, boosting **accuracy from 20% to 80%** on **10+ hours** of audio data processed via *Librosa* and iterative model refinement.
- **Optimized** edge deployment by tailoring the pipeline for Raspberry Pi through integrating hardware-specific adjustments and a custom microphone setup, ensuring real-time performance in resource-constrained forest environments.
- **Enhanced** model robustness by implementing a dynamic feedback loop to continuously refine predictions and improve noise differentiation, securing scalable analysis under diverse conditions.

Software Engineering Intern (Machine Learning) Jan 2023 – Dec 2024
ASU Biodesign Institute *Tempe, AZ*

- **Developed** an end-to-end data pipeline, automating DNA-PAINT image analysis by integrating k-means clustering and custom tracking algorithms, slashing **processing time from 4 hours to 10–30 minutes** per image.
- **Advanced** research capabilities by delivering granular movement data and actionable metrics, transforming traditional nanotech workflows into ML-driven, high-impact research tools.

Software Engineer Aug 2024 – Present
Mesa Historical Museum (EPICS) *Tempe, AZ*

- **Built** an immersive digital experience, developing an interactive website using *React* and *Three.js*, **increasing visitor engagement by 20%** and offering an engaging digital tour of museum collections.
- **Led** cross-functional teams, **directing a 7-member team** to implement scalable content management and ensure sub-second website response times, optimizing the digital visitor experience.

Software Engineer Jan 2024 – Oct 2024
Software Developers Association (SoDA) *Tempe, AZ*

- **Automated** operational workflows, reducing **test case upload time by 98%** using a *Selenium*-based scraper for **200+ files**, streamlining annual code challenge processes.
- **Optimized** membership systems by developing a *Flask-Next.js* application that boosted **operational efficiency by 50%** and enhanced **engagement for 600+** active members.

Leadership Experience

Led teams to secure **4 hackathon wins** — including the **Most Innovative Solution Award** at **Devil's Invent** and the **Sustainable AZ Spark Challenge** (sponsored by **Honeywell, DAASH, and ASU**).

Progressed from Intern in Community Engagement to Associate Technical Director at **SoDA**, managing a team for workshop development, internal tool optimization, and outreach initiatives (e.g., hosting hackathons).

Projects

Amano – Emotion-Based Song Recommendation System | *Flask, Spotify API, OpenAI API, AWS EC2*

- **Improvised** *Spotify's song recommendation system* by developing a backend using *Flask hosted on AWS EC2* that integrates with the *Spotify API* to provide personalized song suggestions using **Reinforcement Learning**.
- **Enhanced** user experience with a real-time *ChatGPT LLM chatbot* that analyzes mood and sends data to the reinforcement model for dynamic song recommendations, functioning like a personal DJ.

Mine Alliance – Fullstack Sustainable Mining Website | *Next.js, Flask, SQLAlchemy, AWS, OpenAI GPT-4, TailwindCSS*

- **Reduced** environmental assessment response times by 40% by leading the development of a **fullstack platform** that integrated *ChatGPT-4 API* for mining site impact assessments.
- Utilized *SQLAlchemy, Flask, AWS EC2*, and geospatial mapping with Leaflet, resulting in increased stakeholder engagement.

Market Anomaly Detection (MAD) | *Python, Streamlit, Scikit-learn, GEMINI, Jupyter Notebook*

- **Developed** an **anomaly detection system** to identify potential financial market crashes, utilizing *Streamlit* for an interactive **user interface** and *Scikit-learn* for model training and tuning.
- **Enabled user-driven customization** and **improved performance** with features like *GEMINI*-powered chatbot, automated model tuning, and support for supervised and unsupervised learning pipelines.

Technical Skills

Languages: Python, C/C++, Java, JavaScript, TypeScript, C#, SQL, HTML, CSS, Flutter
Frameworks & Libraries: Flask, Django, **React**, TensorFlow, PyTorch, scikit-learn, OpenCV, three.js, pandas, numpy
Tools & Environments: Streamlit, Docker, AWS, Linux, Git, GitHub, Selenium, Google Colab, Jupyter Notebooks, **RESTful API**, DevOps, Analytics
Machine Learning & AI: Neural Networks, GEMINI API, Deep Learning, Reinforcement Learning, Unsupervised Learning