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 08/2022 – May 05/2026*

Experience

Software Engineering Intern (Machine Learning) Jul *07/2024* – Present

Geometric Media Lab *Tempe, AZ*

- **Engineered** a hybrid **ML pipeline** 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 **ML pipeline** for *Raspberry Pi* via hardware-specific adjustments and a custom microphone setup, ensuring real-time performance in resource-constrained forest environments.
- **Integrated** a dynamic feedback loop to continuously refine predictions and improve noise differentiation, securing scalable analysis under diverse conditions and **enhancing model robustness**.

Software Engineering Intern (Machine Learning) Jan *01/2023* – Dec *12/2024*

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, **integrating hardware, software and firmware**

Software Engineer Aug *08/2024* – Present

Mesa Historical Museum (EPICS) *Tempe, AZ*

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

Software Engineer Jan *01/2024* – Oct *10/2024*

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*

- **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.
- **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**.

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*

- **Enabled user-driven customization and improved performance** with features like **GEMINI-powered chatbot**, automated model tuning, and support for supervised and unsupervised learning pipelines.
- **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.

Technical Skills

Languages: Python, Java, JavaScript, Scala, C/C++, TypeScript, C#, SQL, HTML, CSS, Flutter, LabVIEW, TestStand, ATEasy
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, Azure DevOps, Oscilloscopes, Logic Analyzers, Network Analyzers, Spectrum Analyzers, Terraform, Chef, Puppet
Machine Learning & AI: Neural Networks, GEMINI API, Deep Learning, Reinforcement Learning, Unsupervised Learning