

# SRI UJJWAL REDDY BEEREDDY

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## EDUCATION

### Arizona State University (4.0 GPA)

Bachelor of Science in Computer Science (Software Engineering), Minor in Entrepreneurship

Tempe, AZ

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

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**Languages:** Python, C/C++, Java, JavaScript, 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

**Machine Learning & AI:** Neural Networks, GEMINI API, Deep Learning, Reinforcement Learning, Unsupervised Learning