

# 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 2022 – May 2026

## EXPERIENCE

### Software Engineering Intern (Machine Learning)

Jul 2024 – Present

Geometric Media Lab

Tempe, AZ

- **Engineered a hybrid ML pipeline:** Combined 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:** Tailored the pipeline for Raspberry Pi by integrating hardware-specific adjustments and a custom microphone setup, ensuring real-time performance in resource-constrained forest environments.
- **Enhanced model robustness:** Implemented 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:** Automated 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:** Delivered 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:** Developed 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:** Directed 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:** Reduced **test case upload time by 98%** using a Selenium-based **scraper for 200+ files**, streamlining annual code challenge processes.
- **Optimized membership systems:** Developed 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

- **Improved 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

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