# 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:** 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*
- **Implemented AWS infrastructure** to **deploy** 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*
- **Integrated ChatGPT-4 API** with *Flask* to **automate** mining site impact assessments, reducing environmental assessment response times by **40%**.
- 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, Java, JavaScript, Scala, C/C++, TypeScript, C#, SQL, HTML, CSS, Ruby, Flutter
**Frameworks & Libraries**: Flask, Django, React, TensorFlow, PyTorch, scikit-learn, OpenCV, three.js, pandas, numpy
**Tools & Environments**: Streamlit, Docker, AWS, Azure, Linux, Git, GitHub, Selenium, Google Colab, Jupyter Notebooks, Terraform, Chef
**Machine Learning & AI**: Neural Networks, GEMINI API, Deep Learning, Reinforcement Learning, Unsupervised Learning