# 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 win **4 hackathons** sponsored by *Honeywell*, *DAASH*, and *ASU*, guiding 15+ developers to competition success
- Rose from Intern to **Technical Director** at *SoDA*, managing 12 engineers to deliver technical workshops for 600+ club members

## Projects

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

- **Developed backend** using *Flask* and integrated with **Spotify API** on *AWS EC2* to provide personalized song suggestions, enhancing Spotify's song recommendation system using **Reinforcement Learning**.
- **Implemented a ChatGPT LLM chatbot** for real-time mood analysis, sending data to a reinforcement model for dynamic song recommendations.

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

- **Developed a fullstack platform** using *Next.js* and *Flask* with *SQLAlchemy* to integrate **ChatGPT-4 API**, **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, C/C++, Java, JavaScript, TypeScript, C#, SQL, HTML, CSS
**Frameworks & Libraries**: Flask, Django, React, **Angular**, TensorFlow, PyTorch, scikit-learn, OpenCV, three.js, pandas, numpy, Ionic, .NET
**Tools & Environments**: Streamlit, Docker, **Microsoft Azure**, AWS, Linux, Git, GitHub, Selenium, Google Colab, Jupyter Notebooks
**Machine Learning & AI**: Neural Networks, GEMINI API, Deep Learning, Reinforcement Learning, Unsupervised Learning