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*

- **Developed** an end-to-end **ML pipeline** for **gunshot detection** by fusing unsupervised **k-means clustering** with a supervised **neural network**. Leveraged **Librosa** for robust **feature extraction** and iterative refinements, boosting **accuracy** from 20% to 80% across 10+ hours of audio data.
- **Optimized** the system for real-time **edge deployment** on **Raspberry Pi** through precise hardware adjustments and custom microphone setups, directly supporting **conservation efforts** by preventing **jaguar poaching** in South American rainforests.
- **Spearheading** research on innovative **video generation models** that integrate **visual language models** and **scene graphs** with **lighting** and **depth maps** within **diffusion frameworks**. This unique approach aims to produce more stable, coherent videos, potentially revolutionizing **digital content creation** and real-time simulations.

Software Engineer — Aug 2024 – Present
Mesa Historical Museum (EPICS) — *Tempe, AZ*

- Developed and architectured an interactive digital experience using **React** and **Three.js**, crafting a dynamic digital tour of museum collections.
- Led a **7-member team** as the lead **Software Engineer**, designing the website architecture, **coordinating deliverables** with community partners, and **delegating tasks** among a designer and software engineers to **meet client requirements.**
- Digitized museum archives to transform static content into an **engaging online experience**, enabling users to explore key individuals and landmarks while **preserving invaluable knowledge.**

Software Engineering Intern (Machine Learning) — Jan 2023 – Dec 2024
ASU Biodesign Institute — *Tempe, AZ*

- Engineered an end-to-end **data pipeline** for **DNA-PAINT image analysis** using **k-means clustering** and custom **tracking algorithms**, reducing processing time from **4 hours** to **10–30 minutes** per image.
- Implemented a standardized, **ML-driven** approach to quantify qualitative data, removing any possible human error in data analysis.
- Enabled precise calculation of **robot movement kinetics**, providing actionable metrics for impactful research findings.

Leadership Experience

Associate Technical Director — Jan 2024 – Present
SoDA (Software Developers Association)

- Architected and facilitated **engaging weekly meetings** and hands-on workshops on **Python/Jupyter Notebook**, **Git 101**, **Object Recognition (YOLO)**, **Flask**, **AI-Powered Chrome**, **AI Integration APIs**, and **SQL**, empowering over **600+ student members** with essential technical skills while cultivating a collaborative community.
- **Led and coordinated** the technical team to maintain the **thesoda.io** website and internal tools, managing a **distinguished member program** for a club of **3000+ members** and **driving initiatives** for hackathons, code challenges, and mentorship program.

Hackathon Achievements: Leveraged strong communication, creative problem-solving, and collaborative leadership to drive team success in high-pressure hackathon environments, securing over **$2.5K** in industry-sponsored winnings while delivering MVP's and **winning 5 hackathons**.

Projects

- **Puter – Advanced Open-Source Internet OS:** Engineered a **robust notification management system** and made a significant **open-source contribution** to Puter by implementing advanced notification handling and SQL-based tracking. This enhancement improved system performance and user experience for Puter—a free, open-source, self-hostable internet OS with over **30K GitHub stars**.
- **Mine Alliance – Fullstack Sustainable Mining Website: Led development of a comprehensive platform** that reduced environmental assessment response times by **40%** by integrating the **ChatGPT-4 API** for mining site impact assessments. Utilized **SQLAlchemy, Flask, AWS EC2**, and **geospatial mapping with Leaflet**. This innovative, AI-powered solution not only earned a hackathon win but also **empowered communities** to connect with authorities and mining companies to devise sustainable mining practices.
- **PosturePro – Real-Time Sitting Posture Analysis:** Engineered a robust system that leverages a user's webcam and utilizes **MediaPipe**, **OpenCV**, **NumPy**, and **Matplotlib** to analyze sitting posture in real time. This innovative solution **empowers programmers to monitor and improve their posture**, mitigating long-term health risks associated with prolonged sedentary work.
- **ClassEase – Automated Class Registration System:** Engineered an automated solution using **Python** and **Selenium WebDriver** (with ChromeDriver) to monitor ASU class availability, log in, and register for classes at the precise moment seats open. This system, adopted by 15 users, **alleviates the stressful** early-morning registration rush ensuring students can rest easy and wake up to **successful enrollments** even when high demand risks website crashes.

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