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#### EDUCATION

#### Arizona State University (4.0 GPA)

Bachelor of Science in Computer Science, Minor in Entrepreneurship

Tempe, AZ Aug 2022 - May 2026

#### EXPERIENCE

#### Software Engineering Intern (Machine Learning)

Geometric Media Lab

- 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 rain-forests.
- Spearheading research on innovative video generation models that integrate visual language models and scene graphs with lighting and depth maps within diffusion frameworks. Aiming to produce more stable, coherent videos, to contribute to revolutionizing digital content creation and real-time simulations.

#### **Software Engineer**

Mesa Historical Museum (EPICS)

- 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)

ASU Biodesign Institute

- 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.
- Facilitated accurate calculations of robot movement kinetics to deliver essential metrics on both individual robot movements and population dynamics, enabling informed decision-making and impactful research outcomes.

# LEADERSHIP EXPERIENCE

### **Associate Technical Director**

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. 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. Earned a hackathon win and 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. **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. 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, AngularJS, Express, NodeJS, TensorFlow, PyTorch, scikit-learn, OpenCV, three.js, Tensorflow, PyTorch Tools & Environments: Streamlit, Docker, Unix, AWS, Linux, Git, GitHub, Selenium, Google Colab, Jupyter Notebooks, Swift, XCode Machine Learning & AI: Neural Networks, LLM, LLVM, Deep Learning, Reinforcement Learning, Unsupervised Learning

Jul 2024 - Present Tempe, AZ

Jan 2023 - Dec 2024

Aug 2024 – Present

Tempe, AZ

Tempe, AZ

Jan 2024 – Present