

Asray Gopa

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EDUCATION

Iowa State University - Ames, IA

Aug 2022 - Anticipated: May 2026

Bachelor of Science - Major in Computer Science, Minors in Economics & Entrepreneurship

3.73/4.0 GPA

RELEVANT EXPERIENCE

Principal Financial Group

May 2025 - Present

Software Engineering Intern

Des Moines, IA

- Built and deployed 3 full-stack applications (Node.js + Spring Boot), improving process efficiency and saving teams 100+ hours per week.
- Contributed to the entire SDLC, design, coding, testing, deployment, and documentation, ensuring production-ready, maintainable code.
- Implemented chaos engineering experiments on AWS to simulate failures, reducing downtime risk by 20%+ while optimizing cloud spend.
- Supported data recovery and disaster recovery strategies, protecting actuarial models that underpin billions in managed assets.

Collins Aerospace

September 2025 - Present

Contractor

Ames, IA

- Streamlined certification workflows by integrating project artifacts into a unified system, cutting artifact reconciliation time by 30%.
- Improved traceability and baseline management with a graph-based backend, reducing engineering errors and rework by ~25%.
- Built a NextJS-based frontend to visualize cross-tool impact trees, increasing requirement coverage visibility by 40%.

National Science Foundation - Moothedath Research Lab

January 2025 - September 2025

Research Intern

Ames, IA

- Prototyped decentralized machine learning models in Python, enabling scalable multi-task learning with reduced training overhead.
- Applied spectral clustering and graph algorithms to group related tasks, boosting accuracy by 15% in experimental benchmarks.
- Deployed distributed training simulations on AWS EC2, achieving 30% faster convergence and validating performance with Frobenius error.

National Science Foundation - ARA Wireless Labs

May 2024 - December 2024

Research Intern

Ames, IA

- Designed deep learning models to analyze wireless spectrum data (TV white space, LoRa), improving signal detection accuracy by 25%.
- Developed a LoRAMesh sensor hub for farmers, using machine learning and computer vision to analyze plant health and detect pests.
- Automated data ingestion and hardware setup, cutting manual work by 40+ hours a week and reducing deployment time by 200%.

Iowa State University Solar Car (prISUm) Team

January 2023 - December 2024

Software & Strategy Engineer

Ames, IA

- Optimized race data simulation database by implementing efficient python picking, enabling data processing and ingestion by 60%.
- Developed software design guidelines, researched processing improvements, and trained 10+ members on optimization techniques.

SKILLS

Languages: Java, Python, JavaScript, Typescript C, C++, C#, Rust, SQL, Assembly

Frameworks/Libraries: Spring, .NET, React, NextJS, NodeJS, RoboFlow, TensorFlow, Expo, Flask, Pandas, NumPy, Matplotlib

DevTools: Git, AWS, Azure, Docker, Kubernetes, Linux, GitHub Actions, Jira, GitHub, VS Code, IntelliJ, PostgreSQL, MySQL, Neo4J, Figma

HONORS & AWARDS

Ivy Hackathon 2024 - First Place; 2025 - Third Place

ISU Innovation Prize 2023 - First Place

BuildDSM Hackathon 2024 - Second Place & Best Pitch

Clayton Farms Hackathon 2022 - First Place

ISU Science Coding Contest 2024 - First Place

MWEC Pitch Competition 2025 - First Place

ENTREPRENEURIAL EXPERIENCE

The Brik

August 2023 - Present

Founder + Operator

Ames, IA

- Orchestrated the development of The Brik, a compact organizational tool, from concept to fruition, with 5 figures in annual sales.
- Oversaw market research, prototype development with 3D printing and laser cutting, and manufacturer partnerships to bring to market.
- Implemented effective marketing strategies, including social media campaigns, to build brand awareness and gather customer feedback.

LEADERSHIP EXPERIENCE

Iowa State University Student Government

September 2022 - August 2025

Student Senator, Legislative Ambassador, Chair of Computer Science Student Advisory Board, and CyRide Board of Trustees

- Championed student-focused policies, securing funding for key initiatives like a campus resource hub and free tutoring credits.
- Led state-level advocacy efforts, lobbying for mental health legislation, contributing to the passage of state-approved bills.

PROJECTS

Scalar News - AI-powered Mobile App for Personalized, Bite-Sized news (React Expo, AWS, Java, Supabase)

- Built an AI-powered news platform that delivers personalized 90-word summaries from reputable global and local sources
- Designed a recommendation engine using machine learning to adapt to user preferences, increasing content relevance and engagement.
- Implemented a React Native frontend and AWS-based backend and infrastructure for automated scraping, and real-time content delivery.

High-Speed Currency Arbitrage System - (Python, AsyncIO, Multithreading, ML, Web)

- Built a trading research platform to detect pricing inefficiencies across global currency markets, identifying arbitrage cycles in real time.
- Optimized arbitrage detection using graph algorithms and parallelized multithreading, cutting runtime from 40 minutes to 0.48 seconds.
- Applied high-performance computing techniques and precision mathematical models, enabling realistic simulation of profitable trades.

Aggression Detection System - Research Prototype - (Python, TensorFlow, AWS Edge)

- Built a real-time system for early aggression detection in dementia patients using GSR sensors and Nowatch wearable devices.
- Developed and trained ML models in Python to predict aggression events, integrating signal processing with TensorFlow.
- Deployed the system as an edge-computing pipeline on AWS, enabling low-latency predictions and potential healthcare integration.