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## EDUCATION

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### B.S. in Computer Systems Engineering, Arizona State University

December 2025

- GPA: 3.06

**Essential Courses:** Computer Architecture, Design and Synthesis of Digital Hardware, Embedded Microprocessor Systems, Introduction to Software Engineering, Computer Networks, Operating Systems

## PROFESSIONAL EXPERIENCE

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### Intern, DSRL, India

July 2024 - September 2024

- Configured ROS 2 IMU nodes on Raspberry Pi with Docker and SSH, enabling remote data access
- Integrated I2C devices with Docker networks, ensuring reliable ROS 2 communication

### Research Intern, Remote, University of South Florida, Florida

May 2023 - January 2024

- Created a tool for gaseous material analysis, increasing processing efficiency by 40%
- Researched “Electronic Noses,” refining material detection methods
- Documented data with visuals, supporting data-driven insights using Microsoft Office tools.

### Programming Assistant Intern, PIS IT Solutions Pvt. Ltd, India

June 2022-Aug 2022

- Programmed “Mock Test” website using MySQL, CSS, HTML, and JavaScript, improving user engagement
- Improved troubleshooting processes, reducing issue resolution time by 15%

## PROJECTS

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### Socket Project, CSE 434(Computer Networks ):

Fall 2024

- Developed a multi-threaded peer-to-peer application in Python, implementing socket programming to manage server and client communication
- Achieved robust tracking of player and game states while maintaining a detailed version control history in GitHub, improving collaboration and traceability.

### Speed Control System, CSE 325 (Embedded Systems):

Fall 2024

- Designed and implemented a control algorithm in C to maintain motor speed under variable load conditions using embedded systems.
- Developed and tested hardware setups involving GPIO registers and motor encoders, ensuring consistent performance across diverse scenarios.
- Prepared a detailed report and conducted a demo to showcase project implementation and results.

**Project 6, CSE330(Operating Systems):** Developed a Linux kernel module for disk caching using dm-cache, implementing and testing in a virtualized environment on UTM to simulate enterprise-level storage systems.

### Role-Based Help System(introduction to Software Engineering)

Fall 2024

- Designed and implemented a secure, role-based help system using JavaFX, enabling personalized content delivery and robust access controls for students, admins, and instructional teams.

- Developed and optimized search functionality with keyword tagging and user-specific filters, enhancing usability and content relevance.
- Created administrative tools for managing articles, including backup, restore, and role-based access features, ensuring seamless data management across semesters.

#### **Digital Circuit Design and FPGA Prototyping**

**Fall 2023**

- Designed and simulated digital circuits using Verilog, implementing and verifying functionality through waveform analysis.
- Utilized FPGA platforms to prototype digital designs and validate performance against timing requirements.

#### **Automated Edge Deployment Platform – Frontend & IaaS Integration**

**ARED Group Inc · Capstone Project**

**Spring 2025**

- Designed and implemented automated Tailscale network registration for edge devices using Python and API key authentication, streamlining zero-touch deployment.
- Dockerized registration system for scalable deployment across distributed edge nodes.
- Integrated Prometheus monitoring stack, including Redis Exporter and Node Exporter, to enable system, service, and application-level visibility.
- Configured /metrics endpoints and created custom alert rules for detecting downtime, resource overuse, and anomalies.
- Enhanced platform reliability and observability for distributed application management in resource-constrained environments.

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### **SKILLS & ACTIVITIES**

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**Technical Skills:** Java, C/C++, HTML, CSS, Python, VERILOG, Microsoft Office, Linux, Docker  
**Language:** English, Assamese, Hindi, French