

BRIDA ESAMBU

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EDUCATION

M.S. Computer Science , <i>The University of Oklahoma</i>	<i>Aug 2024 – May 2027</i>
B.S. Computer Science , <i>The University of Oklahoma</i>	<i>Aug 2022 – May 2026</i>
B.A. Mathematics , <i>The University of Oklahoma</i>	<i>Jan 2024 – May 2026</i>
<ul style="list-style-type: none">Data Science and Analytics Undergraduate Certificate, <i>GPA: 3.58</i><i>Coursework:</i> Software Engineering, Applied Statistical Methods, Data Structures, Machine Learning for Data Science, Cyber Attacks and Defenses, Abstract Linear Algebra, Computer Security, Algorithm Analysis, Database Management Systems,	

CERTIFICATIONS

CompTIA Security+	<i>Aug 2024</i>
Google Cybersecurity	<i>Jul 2024</i>
IBM Full Stack Software Developer	<i>Jul 2024</i>

TECHNICAL SKILLS

Languages: Java, Python, C/C++, SQL (MySQL), JavaScript, HTML/CSS, R, Bash, Dart, PowerShell, Linux Shell Command
Tools & Platforms: React, Node.js, Flask, Django, Flutter, Docker, Kubernetes, Jira, Code Reviews, Agile Methodologies, CI/CD, AWS, Google Cloud Platform, Firebase, Git, GitHub, Cloud Computing, PyCharm, VS Code, Google Colab, Jupyter, TensorFlow, Version Control
DevOps & Security: Metasploit, Nmap, SIEM Tools, Network Scanning, Threat Modeling, Incident Response, Risk & Vulnerability

WORK EXPERIENCE

IT Support Technician

OU Information Technology Learning Spaces Norman, OK
Aug 2023 – Present

- Managed technical support for 150+ classrooms and 20 labs, driving a 20% increase in network uptime through proactive maintenance.
- Reduced average ticket resolution time by 41% by implementing systematic troubleshooting and fostering effective team collaboration.

Software Development Intern

Ronnie K. Irani Center for the Creation of Economic Wealth Norman, OK
Jan 2025 – May 2025

- Built a cross-platform Flutter app for an emergency response startup with a team of 7 interns, integrating scalable architecture and AI-assisted debugging to streamline prototyping.
- Implemented secure authentication via Firebase, including email, Google OAuth, and biometric sign-in using native device APIs, improving both security and user experience.

RESEARCH EXPERIENCE

Research Assistant – Undergraduate Research Fellow

OU Gallogly College of Engineering – Engineering Dean Norman, OK
Jan 2025 – Jul 2025

- Applied advanced statistical and probabilistic techniques to clean and preprocess 3,600+ student records, ensuring unbiased, high-quality data for predictive analysis.
- Built and optimized linear, logistic, and non-linear models leveraging probability theory and regression to quantify how math placement tests predict student retention, success, and degree completion.

PROJECTS

Fortuna – AI-Powered Personal Finance App | React Native, FastAPI, Supabase, PostgreSQL, Celery, TypeScript *Dec 25 – Present*

- Built a cross-platform **React Native** (iOS & Android) app with voice-first UX, real-time **WebSocket** chat, **ElevenLabs TTS**, speech-to-text, biometric auth, and **Apple/Google Sign-In** using **TypeScript** and **TanStack React Query**.
- Built a **FastAPI + PostgreSQL** backend with **JWT/MFA** auth, row-level security, and a **Celery + Redis** distributed task system for timezone-aware financial pipelines and **APNS** push notification delivery.
- Engineered an AI financial coaching engine on **Anthropic Claude** with a dual-channel reasoning architecture, tool-forced structured outputs, **PII sanitization**, and a circuit breaker pattern for fault-tolerant, event-driven insight delivery.

HeadingtonPortal – Full-Stack Visitor Management System | React, Node.js, MongoDB, Express.js *Jun 2023 – Jan 2026*

- Replaced a manual Excel workflow by engineering a full-stack visitor platform that **cut guest registration time by 67% (60s to 20s)**, reduced returning visitor check-ins to **<10s**, and enabled **batch checkouts in <7s** during peak traffic.
- Developed scalable REST APIs, role-based access control, and a responsive UI (React + Redux), eliminating redundant data entry and significantly improving throughput for housing staff.
- Delivered secure data models, optimized search flows, and production deployment on Render, demonstrating strong ownership, end-to-end system design, and measurable operational impact.

Serendipity, HackMIT '25 | Python, Google Gemini API, Vosk, Whisper *Oct 2023 – Jul 2024*

- Engineered a real-time, context-aware AR platform on MentraOS, integrating AI (Claude), GPS, and weather APIs to dynamically generate and manage personalized user quests with high performance and data consistency.
- Solved complex hardware and network constraints by optimizing the data sync layer and developing a voice-controlled UI, ensuring a resilient user experience in low-connectivity environments.

EXTRACURRICULAR, HONORS AND AWARDS

- Out in STEM – President** – Leading initiatives to foster technical skills and community engagement and diversity.
- Microsoft TEALS Volunteer** – Guided teachers in effectively delivering impactful computer science lessons.