

# Mohammed Farah

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## EDUCATION

Duke University - Durham, NC

May 2027

Bachelor of Science in Engineering - Electrical and Computer Engineering, Minor in Cultural Anthropology

## WORK EXPERIENCE

Baini Technologies (HemoSave Device) - Co-Founder & Product Lead - Durham, NC

January 2024 - Present

- Addressed the critical challenge of measuring blood loss and detecting PPH, which kills 70,000+ mothers annually and disproportionately affects developing countries where existing methods are only 50% accurate
- Conducted user research with 20+ medical professionals to identify critical needs in postpartum hemorrhage monitoring, translating insights into technical product specifications
- Analyzed existing blood loss measurement solutions (visual estimation: 50% accurate; gravimetric: 10+ min; premium devices: \$2K+), presenting findings to stakeholders to guide product differentiation strategy
- Defined product requirements and testing protocols that achieved 95%+ correlation accuracy—matching premium devices at <\$500 cost and <2 min measurement time—balancing technical feasibility with user needs
- Awarded 1st place at Rice 360 Global Health Design Competition among 20+ competing teams

HDTP - Operations Intern - Columbus, OH

July - August 2025

- Analyzed end-to-end invoicing workflows through stakeholder interviews, identifying key pain points and communicating findings to inform ERP enhancements.
- Synthesized operational data and user feedback to create actionable recommendations, presenting iterative solution models to guide process changes.
- Designed and implemented automated invoice digitization workflow, reducing manual processing time by 70% (saving 15+ hours/week) and eliminating 200+ monthly data entry errors.

Duke University - Tour Guide - Durham, NC

June 2025 – Present

- Led interactive campus tours for groups of 10-30 prospective students and their families, adapting communication style to audience backgrounds and interests.

## TECHNICAL PROJECTS

Robotics Kinematics Library

October 2025 - Present

- Developing an open-source Python library to address gaps in existing robotics kinematics tools, defining scope and features based on user needs.
- Implementing Denavit-Hartenberg algorithms for multi-joint systems, balancing technical accuracy with library usability.
- Designing an intuitive API that abstracts complex mathematical operations for end users.

Santa/Grinch Bot - Autonomous Holiday Robot

October 2025 - Present

- Designing a dual-mode switching mechanism and integrating sensors to differentiate between objects and enable autonomous operation.
- Developing computer vision algorithms using OpenCV for object recognition and manipulation based on operational mode
- Conducting iterative testing and validation cycles, gathering performance data to optimize recognition accuracy and inform design decisions.

## LEADERSHIP & ACTIVITIES

Black Muslim Coalition – Secretary

August 2025 - Present

- Strengthened community engagement by managing internal communications and member updates.
- Supported community initiatives by documenting decisions and ensuring smooth follow-through on action items.

Member: National Society of Black Engineers (NSBE), Duke Muslim Students Association (MSA)

## SKILLS

Product & Analysis: User Research, Competitive Analysis, Requirements Definition, Data Analysis, Workflow Design, Process Automation, Testing & Validation, ERP Systems

Technical: Python, C/C++, Java, OpenCV, ROS2, MATLAB, Git, KiCad, PSpice, Microsoft Office

Professional: Project Management, Stakeholder Communication, Technical Documentation, Cross-functional Collaboration, Presentation Skills