

# Chibueze Emmanuel Amechi

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CV

Industrial Mathematics (Mathematics & Computer Science) | University of Lagos

## PROFILE

Industrial Mathematics undergraduate specializing in Mathematics and Computer Science, with hands-on experience building scalable AI systems, embedded hardware networks, and systems-level software. Proven ability to architect end-to-end solutions across the full stack — from low-level Rust compilers to cloud-integrated ML pipelines. Targeting a PhD in Computer Engineering with a focus on intelligent systems and hardware-software co-design.

## EDUCATION

**B.Sc. Industrial Mathematics (Mathematics & Computer Science)** | University of Lagos, 2024 – 2028  
Nigeria

Core Focus: Software Engineering · Numerical Analysis · Systems Programming · Statistical Modeling

## TECHNICAL SKILLS

<b>Languages</b>	Python · Rust · TypeScript · JavaScript · C++ · R · SQL · HTML/CSS · LaTeX
<b>Frontend</b>	React · Next.js · Tailwind CSS · Plotly
<b>Backend &amp; Databases</b>	Node.js · Express · Flask · Firebase · Supabase · MongoDB · PostgreSQL
<b>Data Science &amp; ML</b>	PyTorch · Pandas · NumPy · SciPy · Scikit-learn · Power BI · Tableau
<b>Systems &amp; Embedded</b>	Embedded Systems · Raspberry Pi · Custom Compiler Dev · LSP · Scapy
<b>APIs &amp; Tooling</b>	OpenAI API · Gemini API · Twilio · ElevenLabs · Google Cloud STT · Git · Streamlit

## TECHNICAL PROJECTS

**SafeWomb AI** *Node.js · Express · MongoDB · OpenAI API · Google Cloud STT*

- Architected a real-time maternal health monitoring system that analyzes voice patterns using AI to detect risk indicators and dispatch instant SMS alerts via Twilio.
- Engineered a unified pipeline integrating Google Cloud STT for transcription, OpenAI for LLM-based risk analysis, and ElevenLabs for voice synthesis responses.

**NeuroSync Mesh** *Python · PyTorch · Raspberry Pi · Flask · Scapy*

- Developed an offline P2P brainwave mesh network enabling crisis responders to share anonymized EEG focus and stress signals without internet dependency.
- Applied PyTorch and SciPy for real-time signal processing; routed data via Scapy across Raspberry Pi nodes with a Flask/Plotly dashboard for live visualization.

**Goonsharp Compiler & LSP** *Rust*

- Designing and implementing a cross-platform, performance-first programming language with full compilation pipeline and low-level system integration capabilities.
- Building a Language Server Protocol (LSP) implementation to deliver IDE-grade diagnostics, autocompletion, and tooling support across editors.

**Academic CGPA Calculator** *Python · Streamlit*

- Built an interactive web utility enabling students to calculate, track, and project academic standings with a clean Streamlit UI and robust Python backend algorithms.

## EXTRACURRICULAR & LEADERSHIP

**Hackathon Competitor** | Cavista Hackathon, University of Lagos

- Competed in a university-wide hackathon, delivering a full-stack technical solution under strict time constraints, demonstrating rapid prototyping and problem-solving under pressure.

**Robotics & Hardware Initiatives** | Independent & Club Involvement

*Ongoing*

- Conduct hardware diagnostic teardowns, system monitoring automation, and embedded systems exploration to bridge theoretical mathematics with applied physical engineering.