

ABISHEK LWAGUN

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Authorized to work in the U.S. (No sponsorship required)

TECHNICAL SKILLS

Languages: Java, Go, Python, C++, JavaScript, SQL (PostgreSQL, MySQL)
Backend & Cloud: Spring Boot, REST APIs, Microservices, Docker, AWS (EC2, S3), Redis, Node.js, Express.js
Developer Tools: Git, Linux, CI/CD, MATLAB/Simulink, Embedded Systems, Raspberry Pi
Core Concepts: Data Structures & Algorithms, System Design, Object-Oriented Programming (OOP), Concurrency

EXPERIENCE

- Undergraduate Researcher (First Author)** Aug 2025 – Dec 2025
Illinois Institute of Technology (Supervised by Dr. Koundinya Challa & Dr. Chandra Jaiswal) Chicago, IL
- Engineered an end-to-end data pipeline in Python and C++ to interface with custom optical hardware sensors on a Raspberry Pi, streaming and processing real-time physical entropy data.
 - Developed low-latency statistical validation algorithms to run entropy and NIST randomness tests against live data streams, ensuring real-time signal processing and accuracy.
 - Authored and submitted a first-author research paper detailing quantum randomness generation architecture for academic publication.
- Freelance Software Engineer** Jan 2022 – Feb 2025
Fiverr Remote
- Architected and deployed production-grade RESTful APIs using Java (Spring Boot) and Node.js for 15+ client web applications, maintaining a 4.8/5.0 average rating.
 - Optimized database queries and implemented caching layers using PostgreSQL and Redis, cutting average API response times by 40% (from ~250ms to 150ms).
 - Integrated secure JWT-based authentication and role-based access control (RBAC) protocols across full-stack applications to prevent unauthorized endpoint access.

PROJECTS

- Distributed Microservices Task Engine** | Java, Spring Boot, PostgreSQL, Docker, Redis Present
- Developed a scalable distributed task scheduling backend capable of processing asynchronous workloads across multiple worker instances.
 - Configured Redis as an in-memory caching layer and task queue manager, reducing database write latency by 35%.
 - Containerized core services using Docker and configured CI/CD deployment pipelines on AWS EC2.
- Autonomous Embedded Control System** | C++, MATLAB/Simulink, Raspberry Pi Nov 2023 – Jan 2024
- Designed real-time feedback control algorithms in C++ and MATLAB for a multi-axis robotic manipulator, achieving > 90% task execution accuracy in automated pick-and-place trials.
 - Optimized sensor data polling and actuator control loops, decreasing system response latency by 25% under real-time execution constraints.

EDUCATION

- Minnesota State University, Mankato** Mankato, MN
B.S. in Computer Information Technology (Software Engineering Focus) Expected Dec 2026
- Relevant Coursework:** Data Structures & Algorithms, Object-Oriented Design, Computer Organization, Operating Systems, Artificial Intelligence, Machine Learning, Applied Statistics.

AWARDS & LEADERSHIP

1st Place Winner – Real-Time Communications Expo, Illinois Institute of Technology (2025)
International Excellence Grant Recipient – Awarded for high academic achievement and leadership in computing research.