

Tsigemariam Zewdu Tadesse

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PROFESSIONAL EXPERIENCE

IcogLabs, AI/ML Engineer

09/2025 – Present | Addis Ababa, Ethiopia

- Developed and optimized highly Neuro-Symbolic AI systems within the OpenCog Hyperon architecture, contributed to the effort of integrating Meta-Optimizing Semantic Evolutionary Search (MOSES) to automate program synthesis.
- Worked on Automated Theorem Prover integrating Probabilistic Logic Networks (PLN) and Graph Neural Networks (GNNs).

Swift System Technology, Backend Developer Intern

07/2025 – 09/2025 | Addis Ababa, Ethiopia

- Engineered scalable backend services using NestJS, Prisma, and PostgreSQL, improving data query efficiency by 8% and supporting core platform features.
- Secured platform endpoints by implementing JWT, OAuth2, and Role-Based Access Control (RBAC), eliminating unauthorized access vulnerabilities and supporting secure sessions for 890+ users.
- Enhanced system reliability by automating API testing workflows with Jest, achieving 84% test coverage and reducing post-deployment regression issues by 64%.

EDUCATION

Addis Ababa University, Bachelor of Science in Software Engineering

01/2023 – Present | Addis Ababa, Ethiopia

- CGPA: **3.96/4.0** 📄
- Relevant Courses: Data structure and algorithms, Object Oriented programming, Database systems, Operating Systems, Computer Networking, Web development and server side Rendering, Mobile application Development, Introduction to AI, Mathematics for AI, Machine Learning, Robotics.

Africa to Silicon Valley, Advanced DSA, and Software Engineering Program

01/2025 – Present | Addis Ababa, Ethiopia

- Mastered advanced Data Structures and Algorithms by solving **1000+** Leetcode 📄 and Codeforces 📄 consistently for **200+** days.
- Developed strong skills in algorithmic thinking, complexity analysis, and problem decomposition. Further Awarded as **Third best A2sivain of the year** 📄 and **Most consistent problem solver of the year** 📄 in Generation 6 first year education.
- Completed an intensive **Backend Engineering track**, building scalable services using **Go (Golang)**.

PROJECTS

Automated Theorem Prover, Experimental proof-search and theorem-proving

04/2026 – Present

- Engineered an automated theorem prover in Python by integrating Graph Neural Networks (GNNs) with Probabilistic Logic Network (PLN) backward chaining.
- Designed the architecture to scale complex logic inference and optimize the evaluation of mathematical proofs.

Metta-Moses, AI Reasoning & Program Evolution Research

09/2025 – 03/2026

- Contributed to an open-source implementation of MOSES (Meta-Optimizing Semantic Evolutionary Search), an AI system for program evolution and learning.
- Developed and extended components of Metta, a reasoning language for artificial general intelligence research.
- Integrated probabilistic model generation with automated program synthesis frameworks, enabling scalable symbolic reasoning.

JobMate, An AI powered career buddy for Africa

08/2025 – 10/2025

- Designed and built backend services to perform resume analysis, skill extraction, and career guidance.
- Built high-availability backend microservices using Go (Gin), serving scalable AI-powered features via REST APIs.
- Evaluated system outputs with real user cases and iteratively refined prompts to improve response quality and usefulness.
- Collaborated with frontend team via GitHub, ensuring smooth integration and reliable deployment.

TECHNICAL SKILLS

Languages (Python, Java, JavaScript, TypeScript, C++, GO, Dart, Lean, MeTTa, Haskell) | **Frameworks** (React.js, Next.js, Nest.js, Express.js, Gin, pytorch, TensorFlow, Flutter) | **Databases** (PostgreSQL, MongoDB) | **tools** (Git, Docker, Google Cloud Platform, Azure, Linux)

LEADERSHIP AND MENTORSHIP

Chapter President, CodeHer

07/2025 – 12/2025 | Addis Ababa, Ethiopia

- Led a local chapter in Addis Ababa, mentoring 20+ young women in coding projects, workshops, and career guidance.
- Organized events with fellow presidents, increasing community participation by 40% in 2 months.

Volunteer Instructor, STEM for Kids

07/2024 – 11/2025 | Addis Ababa, Ethiopia

Taught HTML, CSS, JavaScript, and Python to 100+ high school students, sparking early interest in software careers.