

MILKIYAS GEBRU

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[L](#)eetCode

Education

B.Sc. in Electrical and Computer Engineering (Major in Computer Engineering), 09/2018 – 07/2023

Addis Ababa University [☑](#)

- **CGPA - 3.96/4** (Awarded the Gold Medal for being the top scorer in the entire engineering campus)

- Relevant Courses taken:

- Database - Software Engineering - Object Oriented Programming
- Data structures - Computer Architecture and Organization

Coding Academy, Africa to Silicon Valley 12/2021 – 12/2022

- **Relevant Courses:** Dynamic Programming, Graphs, Greedy Algorithms, Divide and Conquer, Topological Sorting, Heuristic Searching, Segment Tree, Trie, Heap.
- Solved more than 900 Data Structures and Algorithmic problems in Leetcode [☑](#) .

Research Experience

Software Researcher, University of Illinois Urbana-Champaign Plus Research Program 05/2025 – Present
Technologies used: Python, Linux, Pandas, Major Remote

- I got accepted to the **UIUC+** summer research program of 2025; only 103 out of 1370 applicants were selected after rigorous evaluation.
- The research area is on mutation testing, specifically using LLMs to detect equivalent mutants and is led by Prof. Darko Marinov.
- Prepared and delivered presentation on mutation testing and the research paper "LLMorpheus: Mutation Testing using Large Language Models".
- Wrote tests to kill mutants and used LLMs to produce tests.
- Created a script that would inject the newly created test into an existing test suite.
- Generated mutants for several defects4j projects using **Major** mutation testing tool.
- Reconstructed mutants from the generated mutants.log and actually compared them with the mutants generated using Major.
- Extracted the mutants used in the research papers "Equivalent Mutants in the Wild: Identifying and Efficiently Suppressing Equivalent Mutants for Java Programs" and "LLMorpheus: Mutation Testing using Large Language Models" using Abstract Syntax Trees.
- Evaluated the effectiveness of the LLMs in detecting equivalent mutants.
- Our research paper has been directly accepted to the ISSTA 2026 conference.

Research Assistant, University of Michigan 05/2022 – 07/2022
Technologies: Python, NumPy, Pandas Remote

- Research Title—Benchmark Suite for Explainable AI.
- Conducted a 3-month-long research project focusing on finding different benchmark suites for comparing different AI models explainers under the mentorship of Prof. Valeria Bertacco and Dr. Andrew McCrabb.
- Trained different AI models ranging from decision trees to neural networks using numerical, categorical, and image datasets.
- Explained the models' predictions using LIME, SHAP, and Anchor.
- Compared the different AI explainers using different qualitative, and quantitative measures, including runtime, and fidelity.
- Presentation Link - **BeXAI** [☑](#)
- Website Link - BeXAI [☑](#)
- Github Link - BeXAI [☑](#)

Work Experience

Math Research Analyst, Turing Enterprises Inc. 10/2024 – 03/2025

- Trained Mathematical concepts to various Large Language Models.

Head Of Education, A2SV 03/2023 – 12/2024
Technologies : Python, Golang

- Created automation scripts in Apps Script and Python to automate students' progress tracking on different learning platforms, reducing the time required from hours to minutes.
- Provided training to 30+ backend development students in GoLang and clean architecture principle.
- Delivered 10+ comprehensive lessons on data structures and algorithms to over 30 students, covering topics like dynamic programming and graph theory.

Awards

Recognition of Gold Medalist, *Addis Ababa University*

19/07/2023

Awarded the Gold Medal for being the top scorer in the Addis Ababa Institute of Technology(Engineering Faculty of Addis Ababa University) [↗](#)

Seeds for the Future of 2021, *Huawei*

Certificate of Completion Link - SeedsForTheFuture [↗](#)

Skills

- **Programming Languages**: JavaScript, TypeScript, Python, C++, GoLang
- **Frontend** - ReactJs, TailwindCss, HTML, CSS, Next.Js
- **Backend** - Node.Js, Express.Js, Go Gin, FastAPI
- **Databases** - MongoDB, PostgreSQL, MySQL
- **Databases ORM** - Mongoose, Sequelize
- **Version Control** - Git

Certificates

- Supervised Machine Learning: Regression and Classification [↗](#)
- Advanced Learning Algorithms [↗](#)
- Getting Started with Deep Learning

Languages

English

- IELTS Score: 8