

Yoseph Berhanu Alebachew

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Professional Summary

Passionate graduate student and dedicated former Tech Lead with over 10 years of experience in software development, research, and education. Proven track record in leading projects that increased efficiency by 45% and developed systems impacting over 14 million landholders. Skilled in Python, Java, and micro-services architecture with a focus on cognitive support systems for software developers.

Skills

- **Languages:** Python, Java, JavaScript/TypeScript, C#
- **Frameworks:** Angular, Spring Boot, Java EE, .NET Core
- **Databases:** PostgreSQL, MySQL, MongoDB
- **DevOps:** Azure DevOps, GitLab CI/CD
- **Architecture:** Microservices, SaaS
- **Research:** Quantitative and Qualitative Research, PyTorch, Scikit-learn, TensorFlow
- **Leadership:** Tech Leadership, Software Project Management
- **Others:** Map-based Service Development, Localization, API Integration

Experience

Graduate Research/Teaching Assistant, Virginia Tech – Blacksburg, VA Aug 2023 – Present

- Conducting research on cognitive support systems to enhance software developer practices.
- Designed and conducting a qualitative study to understand perspectives, expectations, and challenges in the source code review process pertinent to bias.
- Serve as a teaching assistant for a graduate course on Machine Learning.
- Teaching the course 'CS 4104: Data and Algorithm Analysis' as an instructor of record.

LIS Consultant, World Bank Group – Addis Ababa, Ethiopia Mar 2022 – Jul 2023

- Led assessments on six Ethiopian land information systems for the Integrated Land Management Project (ILMP), driving governmental capability enhancements.
- Developed high-level requirements for a national system to improve software integration and data sharing.
- Outlined land management information system investments, delivering key situation analyses, design recommendations, and executed cost-benefit analyses.

Information Technology Consultant, NIRAS International Consulting – Addis Ababa, Ethiopia Jul 2021 - Sep 2022

- Developed and maintained components for the National Rural Land Information System (NRLAIS) for the Ministry of Agriculture, Ethiopia, using Java EE and Python (QGIS plugin).
- Advised on strategic decisions for the national roll-out of NRLAIS, addressing incremental functionality additions and regional expansion challenges, including adapting to diverse regional rules, and open-source-based implementations saving the project an estimated \$10Mil over 10 years in license costs.

Tech Lead, Digital Medarbejder AS – (Norway, Remote), Addis Ababa, Ethiopia Dec 2019 – Aug 2021

- Designed and developed 12 micro-service-based SaaS applications primarily using .Net Core RESTful APIs and progressive Angular front-end apps.
- Devised and implemented CI/CD strategies using GitLab and Azure DevOps to introduce 45% efficiency in delivery time.
- Developed and standardized reusable libraries and packages, including authentication, authorization, and auditing services.
- Designed and developed a suite of reusable libraries for authentication, authorization, auditing,

communication, UI framework, and a common services library featuring semi-automatic localization and external API integration proxies scheduling that resulted in up to 28% improvement in project bootstrap speed.

- Led a team of 18 developers, enhancing project execution and delivering high-quality software products.
- Designed and implemented map-based services for cross-application use, including support for the Norwegian SOSI formats.

Software Developer, DAI – Addis Ababa, Ethiopia

Nov 2014 – Jun 2017

- Developed two systems for rural land administration, one of which went on to constitute the National Rural Land Administration System.
- Designed and developed a mass registration (MASSREG) using Java EE, PostGIS, and Python-enhanced QGIS, certifying over 14 million landholders across 150 Woredas.
- Designed and developed a land transaction management system that supported over 20 land transactions with customizable rules for each that was deployed after MASSREG in all Woredas.
- Designed a custom MIS with Laravel and MySQL and pioneered an incremental synchronization feature for offline data integrity across 150 deployment sites.

Lecturer, Addis Ababa University – Addis Ababa, Ethiopia

Jul 2014 – Aug 2023

- Delivered core computer science courses, including Programming, Data Structures, Theory of Algorithms, Advanced Unix Programming, and Object-Oriented Programming.
- Co-founded and run 4K Labs in 2016, evolving from a RoboCup participant to an AI, robotics, and IoT undergraduate R&D lab.
- Co-organized a community outreach program, teaching introductory computer science to 500+ high school students with the help of 15 volunteer undergraduates.
- Served on academic, community service guideline, and project management committees, enhancing departmental operations.

Education

Virginia Tech, Ph.D. in Computer Science

May 2027 (In Progress)

- Working on building systems that support software developers based on their affective and cognitive state.

Addis Ababa University, M.Sc. in Computer Science

Jun 2014

- Thesis: "A Framework for Multi-source Prefetching Through Adaptive Weight" – **Grade:** *Excellent*
- My thesis work implemented a federated machine learning to improve prefetching performance.
- Graduate Valedictorian
- **GPA:** 3.96

Addis Ababa University, B.Sc. in Computer Science

Jun 2010

- Valedictorian
- **GPA:** 3.74