

Alemnew Sheferaw Asrese

Education

- 2014 – 2021 **Doctor of Science (Tech.) in Networking Technology**, *Aalto University, Finland.*
- 2011 – 2014 **Master degree in Computer Science**, *University of Trento, Italy.*
- 2007 – 2010 **Bachelor degree in Information Science**, *Adama University, Ethiopia.*

Primary Skills and Focus

- Computer networks and Internet protocols
- Cloud orchestrators using Kubernetes and Docker
- Programming skills in Java, Python, Go, Android, C, C++
- Web development skills in HTML, CSS, JavaScript, JQuery, NodeJS, PHP, JSP
- DevOps: GIT, Shell, jenkins, gitlab, robot-framework, selenium, Prometheus
- Web Performance and Quality of Experience measurement and modeling
- Machine learning, data analysis and visualization in Python and R

Professional Summary

Software and cloud engineer with professional experience and keen interest in algorithm, software, cloud & web development, automation, data analysis, and machine learning. Through industry level product development and several national and European projects, I have acquired hands-on experience in translating research into practical implementation and applying it to solving real-world problems. This involves designing methods, metrics, algorithms, implementing tools and systems, validating and performance measurement. My technical skills include algorithm design, software development, cloud automation using Kubernetes, web development, performance and functionality testing, measurement, data analysis and machine learning. I am agile-minded, solutions-oriented and always open to embrace new ideas and challenges.

Work Experience

- 2021 – **Senior Software Engineer**, *SKYLO TECHNOLOGIES*, Finland.
- 2020 – 2021 **Senior Developer**, *ERICSSON*, Finland.

Projects:

- CCD – Cloud Container Distribution

Tasks:

- Cloud automation and orchestration using Kubernetes.
- Developed software defined storage components on top of Kubernetes.
- Developed monitoring components of storage related functions for CCD.

Tools: Kubernetes, Docker, OpenStack, Python, Shell, Go, Ansible, Helm, Prometheus, Robot, Jenkins, Gerrit, Jira, GIT

Summary: Building a management and orchestration of cloud native containerised teleco applications using the industry standard container orchestration platform – Kubernetes. CCD adds components to Kubernetes to manage networks, storage, monitoring, etc.

2014 – 2019 **Researcher**, *AALTO UNIVERSITY*, Finland.

Projects:

- METRICS – Measurement for Europe: Training and Research for Internet Communications Science
- LEONE – From global measurements to local management

Tasks:

- Measurement system design and implementation.
- Web performance and QoE measurement.
- Web QoE modeling using machine learning algorithms.
- Data analysis and visualization.

Tools: Java, Python, JavaScript, Shell, C, docker, selenium, git

Summary: Funded by the European commission under the Seventh Framework Program for research and development (FP7) to develop metrics, methods and tools for web performance measurement and model the (mobile) user experience, e.g., by using the state of the art expert and data-driven QoE models.

2013 – 2014 **Software Developer**, *NEC LABORATORIES EUROPE*, Germany.

Projects and tasks:

- Designed and implemented algorithms for dynamic fleet management system.
- Designed and implemented a communication platform for electric vehicles by extending NEC's C2X-sdk functionality for vehicle to vehicle and vehicle to infrastructure communication.

Tools: Java, SVN.

03 – 07/2012 **Web Developer**, *GREENPREFAB*, Italy.

Project: VENUS-C – Virtual multidisciplinary environments using cloud computing

Task: Designed and implemented a cloud-based solution and web portal for civil engineers and architects to do green building rendering and energy efficiency simulation.

Tools: Java, HTML, CSS, JavaScript

2010 – 2011 **Graduate Assistant**, *ADAMA SCIENCE & TECHNOLOGY UNIVERSITY*, Ethiopia.

Project: Malaria Expert System

Tasks: Design and implementation of multilingual malaria expert system

Tools: Java, HTML, CSS, JavaScript

Summary: Funded by the Ethiopian Ministry of ICT to develop an expert system that patients use to know the possibility of malaria existence on their body.

Technical Skills

- Programming languages: Java, Python, Go, Kotlin, C, C++, Android
- Web development technologies: JEE, JSP, PHP, HTML, CSS, JavaScript, JQuery, Ajax, AngularJS, NodeJS
- Cloud automation and orchestration: Kubernetes, Docker, Ansible, Helm
- Machine learning and data analysis: Jupyter, Python, Pandas, SciKit-learn, R
- Database technologies: MySQL and SQL
- DevOps and Utilities: Shell, CI/CD, Jenkins, Git
- Test automation: Robot-framework, Selenium
- Experience in Agile methodology: Jira, Trello
- Excellent presentation skill
- Fluent in English

Selected Software Projects

- WebLAR: Measuring Web Latency, ATF, and Rendering (using py, sh, Java, js, docker)
- WePR: Web performance and rendering measurement system (using c, py, Java, sh)
- Library Management System (using Java/JEE, MySQL, JSP, XML, CSS and js)
- Tewahedo Android App
- Bilingual Malaria Expert System (using Java, HTML, CSS, JS)

Selected Publications

1. A. S. Asrese, *et. al.* Measuring Web Latency and Beyond: Methods, Tools & Longitudinal Dataset. IEEE TNSM, June 2019.
2. A.S. Asrese, *et. al.* Measuring Web Quality of Experience in Cellular Networks. PAM 2019.
3. E. A. Walelgne, A. S. Asrese *et. al.* Clustering and Predicting the Data Usage Patterns of Geographically Diverse Mobile Users. Elsevier Com. Net., March 2021.