Alemnew Sheferaw Asrese

Kijanpitäjäkuja 4A 15
02770 Espoo, Finland
+358 456 987 878
alemnewsh@gmail.com
alemnew.github.io

Research Interest

Intenet Measurement, Quality of Experience (QoE), QoE Modelling, Web Performance, Network Management, Distributed & Networked Systems, Cloud Computing, Machine Learning for Networking.

Education

2014 – expected 2021	**Doctoral Candidate in Networking Technology**, *Aalto University, Finland*. Dissertation: Web Quality of Experience Measurement: Metrics, Methods and Tools Advisors: Prof. Dr.-Ing. Jörg Ott and Dr. Pasi Sarolahti
2011 – 2014	**M.Sc. in Computer Science**, *University of Trento, Italy*, *GPA – 99/110*. Thesis: Design and Development of Dynamic Fleet Management System Prototype Advisor: Prof. Alberto Montresor
2007 – 2010	**B.Sc. in Information Science**, *Adama University, Ethiopia*, *GPA: 3.9/4.0*. Thesis: Online Voting System for National Electoral Board of Ethiopia. Advisor: Belayneh Mengistu

Work Experience

2020 –	**Senior Developer**, ERICSSON, Finland. - Working on cloud automation using Kuberenets. - Developed software defined storage for cloud native applications.
2014 – 2019	**Researcher**, AALTO UNIVERSITY, Finland. - Researched the factors affecting Web Performance and Quality of Experience. - Developed Web Performance and QoE measurement system and tools. - Analyzed large datasets using Python and R. - Instructed and assisted laboratory lessons of two master level courses. - Performed technical presentations at international conferences and seminars.
2013 – 2014	**Software Developer – Intern**, NEC LABORATORIES EUROPE, Germany. - Designed and implemented a dynamic fleet management system prototype by using the Vehicle Routing Problem algorithms. - Designed and implemented a communication platform for electric vehicles by extending the C2X-sdk functionality for vehicle to vehicle and vehicle to infrastructure communication.
Mar – Jul 2012	**Web Developer & Programmer**, GREENPREFAB, Italy. - Designed and implemented a cloud-based solution and web portal for civil engineers and architects to perform green-building rendering and energy efficiency simulation.
2010 – 2011	**Graduate Assistant**, ADAMA SCIENCE & TECHNOLOGY UNIVERSITY, Ethiopia. - Instructed both theoretical and laboratory lessons for bachelor students. - Designed and implemented a bilinugal Malaria Expert System using Java, HTML, JavaScript and CSS.

2008 – 2010 **Laboratory Technician, Librarian, & Intern**, ADAMA UNIVERSITY, Ethiopia.
- Troubleshooting & installing personal computers.
- Configured the KOHA library integrated management system as a member of the library automation team.
- Converted more than 500,000 e-books to PDF from different formats.

Research Visit

May – Jul 2018 **Visiting Researcher**, TU MUNICH, Germany.
Mentor: Dr. Vaibhav Bajpai
Topic: Measuring Web QoE in Cellular Networks

Jun – Aug 2017 **Visiting Researcher**, TU MUNICH, Germany.
Mentor: Dr. Vaibhav Bajpai
Topic: Measuring Web Latency & Rendering Performance

Mar – May 2017 **Visiting Researcher**, INRIA OF PARIS, MUSE RESEARCH GROUP, France.
Mentor: Dr. Vassilis Christofidis & Dr. Renata Cruz Teixeira
Topic: Analysis of Quality of Service (QoS) metrics for Web QoE modeling

Mar – Jul 2016 **Visiting PhD Student**, SIMULA RESEACH LABORATORY, Norway.
Mentor: Dr. Özgü Alay
Topic: Measuring and modelling Web performance and QoE on mobile broadband networks under different mobility scenarios using MONROE platform.

Teaching Experience

Aalto University

2015 **Teaching Assistant**, *Network Programming (M.Sc. level course)*.
Responsibility: Instructed and graded the software project.

2014 **Teaching Assistant**, *Communication Networks (M.Sc. level course)*.
Responsibility: Instructed and graded the laboratories exercises.

Adama Science & Technology University

2011 **Instructor**, *Introduction to Information Technology*.

Teaching Assistant, *Web programming with HTML, CSS, JavaScript & PHP*.

2010 **Teaching Assistant**, *Fundamentals of Programming with C++, and Object Oriented Programming with Java*.

Technical Skills

- **Programming languages:** Java/JEE, Python, Go, JavaScript, Shell, Android, C++, PHP
- **Data analysis & visualization tools:** Python, R
- **Database:** MySQL, SQL
- **Containerization & Orchestration:** Docker, Kubernetes
- **Networking tools:** Mininet, Wireshark
- **Operating systems:** OS X, Linux, Windows
- **Utilities:** GIT, Ansible, LaTeX

Trainings

June 2016 **Strategic Management, Leading & Coaching**, *IE Business school / IE University*, Madrid, Spain.

July 2015 **Cyber Security**, *Tallinn University of Technology*, Tallinn, Estonia.

Awards and Grants

2018 Best Dataset Award, ACM/IEEE Passive Active Measurement Conference, Berlin, Germany.

2016 ACM student travel grant to SIGCOMM conference, Florianopolis, Brazil.

2015 ACM student travel grant for CoNEXT conference, Heidelberg, Germany.

2015 ACM travel grant for Internet Measurement Conference, Tokyo, Japan.

2015 Award of Excellence for the year 2014 from University of Trento, Italy.

2014 Marie-Curie Initial Training Network grant for three years of PhD study.

2011 University of Trento Opera Universitaria Scholarship for a two years Master's study.

Publications

[1] E. A. Walelgne, **A. S. Asrese**, J. Manner, V. Bajpai, and J. Ott. "Clustering and Predicting the Data Usage Patterns of Geographically Diverse Mobile Users". In: *Elsevier Computer Networks* 187 (Mar. 2021). [Impact Factor: 3.111]. DOI: 10.1016/j.comnet.2020.107737.

[2] E. A. Walelgne, **A. S. Asrese**, J. Manner, V. Bajpai, and J. Ott. "Understanding Data Usage Patterns of Geographically Diverse Mobile Users". In: *IEEE TNSM* (2020). [Impact Factor: 4.682]. DOI: 10.1109/TNSM.2020.3037503.

[3] **A. S. Asrese**, S. J. Eravuchira, V. Bajpai, P. Sarolahti, and J. Ott. "Measuring Web Latency and Rendering Performance: Method, Tools & Longitudinal Dataset". In: *IEEE TNSM* 16.2 (June 2019). [Impact Factor: 4.682]. DOI: 10.1109/TNSM.2019.2896710.

[4] **A. S. Asrese**, E. A. Walelgne, V. Bajpai, A. Lutu, Ö. Alay, and J. Ott. "Measuring Web Quality of Experience in Cellular Networks". In: *ACM PAM'19. Puerto Varas, Chile.* [26.6%, 20/75]. Mar. 2019. DOI: 10.1007/978-3-030-15986-3_2.

[5] M. Isah, A. Phokeer, J. Chavula, A. Elmokashfi, and **A. S. Asrese**. "State of Internet Measurement in Africa – A Survey". In: *AFRICOMM 2019, Porto-Novo, Benin.* Mar. 2019.

[6] D. N. da Hora, **A. S. Asrese**, V. Christophides, R. Teixeira, and D. Rossi. "Narrowing the Gap Between QoS Metrics and Web QoE Using Above-the-fold Metrics". In: *ACM PAM'18. Berlin, Germany.* [40%, 20/50] Best Dataset Award. Mar. 2018. DOI: 10.1007/978-3-319-76481-8_3.

[7] **A. S. Asrese**, P. Sarolahti, M. Boye, and J. Ott. "WePR: A Tool for Automated Web Performance Measurement". In: *IEEE Globecom'16 Workshops. Washington, DC, USA.* Dec. 2016. DOI: 10.1109/GLOCOMW.2016.7849082.

[8] P. Reichl, S. Egger, S. Möller, K. Kilkki, M. Fiedler, T. Hoßfeld, C. Tsiaras, and **A. Asrese**. "Towards a Comprehensive Framework for QoE and User Behavior Modelling". In: *IEEE QoMEX'15. Pilos, Messinia, Greece.* May 2015. DOI: 10.1109/QoMEX.2015.7148138.

Theses

[1] A. S. Asrese. "Web Quality of Experience Measurement: Metrics, Methods and Tools". Under Publication. Aalto University.

[2] A. S. Asrese. "Design and Development of Dynamic Fleet Management System". Master thesis. University of Trento, Italy, 2014.

[3] A. S. Asrese. "Online Voting System for National Electoral Board of Ethiopia". Bachelor thesis. Adama University, Ethiopia, 2010.

Posters and Demos

[1] A. Phokeer, M. Isah, J. Chavula, **A S. Asrese**, and A. Elmukashfi. "Characterizing RIPE Atlas Platform Deployment in Africa". In: 2nd *Conference on Computing & Sustainable Societies.* 2019.

[2] **A. S. Asrese**, E. A. Walelgne, A. Lutu, Ö. Alay, and J. Ott. "Poster abstract: Measuring Web Latency in Cellular Networks". In: *IEEE INFOCOM'18. Honolulu, HI, USA.* Apr. 2018. DOI: 10.1109/INFCOMW.2018.8406855.

[3] E. A. Walelgne, **A. S. Asrese**, V. Bajpai, J. Ott, and J. Manner. "Using Crowdsourcing Data for Adaptive Video Streaming in Cellular Network". In: *ACM MobiSys'18. Munich, Germany.* June 2018. DOI: 10.1145/3210240.3210804.

[4] **A. S. Asrese**, P. Sarolahti, and J. Ott. "Web QoE Inference from Large-scale Measurement". In: 5th *TMA PhD School. Barcelona, Spain.* Apr. 2015.

Talks

July 2019	Measuring Web QoE in Operational MBB Networks. *Simula Metropolitan Center for Data Engineering.* Oslo, Norway.
June 2019	Measuring Web Latency: Observations from Large-scale Measurement. *Internet Measurement Workshop in Africa.* Kampala, Uganda.
April 2019	Measuring Web QoE in Cellular Networks. *Doctoral Seminar of Connected Mobility Chair at Technical University of Munich.* Salzburg, Austria.
October 2016	Web QoE and Performance in Mobile Broadband Networks. *Doctoral Seminar of Connected Mobility Chair at Technical University of Munich.* Burghausen, Germany.
November 2014	Netradar – Measuring mobile networks. *ACM SIGCOMM IMC'14 Conference.* Vancouver, Canada

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)
- Bilingual Malaria Expert System (using Java, HTML, js, css)
- Tewahedo Android App
- Library Management System (using HTML and JEE framework)

Research Projects

2014 – 2017	**METRICS**, *Measurement for Europe: Training and Research for Internet Communications Science*, FP7-PEOPLE – Contract no. 607728. - Worked on WP 1 and contributed for deliverable 1.1, 1.2, 1.3.

2012 – 2015 **LEONE**, *From global measurements to local management*, EU FP7 ICT2011.1.1 – contract no. 317647.
  - Contributed for deliverable 4.3.

2010 – 2012 **VENUS-C**, *Virtual multidisciplinary environments using cloud computing*, EU FP7 Research Infrastructure – contract no. 261565.
  - Designed and implemented a could-based solution for architects and civil engineers to render green building architecture and energy efficiency simulations.

2010 – 2011 **Malaria Expert System**, *Grant from Ethiopian Ministry of ICT*, a collaboration project with Dr. Dereje Yohaness.
  - Designed and implemented a multilingual web-based expert system which takes malaria symptoms as an input and gives information about the situation of the patient.

Professional Services

Technical Program Committee

2020 AFRICOMM EAI International Conference on e-Infrastructure and e-Services for Developing Countries

2018 AFRICOMM Workshop on Internet measurements research in Africa

Shadow TPC

2017 – 2019 ACM Internet Measurement Conference

2018 IFIP Traffic Measurement and Analysis Conference

Reviewer

2019 ELSEVIER Future Generation Computer Systems

2019 IEEE Transactions on Network & Service Management (TNSM)

2019 IEEE/IFIP Symposium on Integrated Network Management

2019 The Ethiopian Journal of Science and Technology (EJST)

2018 IFIP Networking Conference

Organizer

2017 – 2018 International Conference on Ethiopian Church Studies

References

Jörg Ott
Technical University of Munich, DE
ott@in.tum.de

Pasi Sarolahti
Aalto University, FI
pasi.sarolahti@aalto.fi

Vaibhav Bajpai
Technical University of Munich, DE
bajpaiv@in.tum.de