Ermias Andargie Walelgne

Contact Information	Department of Communications and Networking (Comnet) Aalto University Maarintie 8, 02150 Espoo, Finland	http://ermiaswalelgne.github.io ermias.walelgne@aalto.fi ✆+358 451959032

Research Interests

Internet measurements, mobile data analysis, wireless network performance, user experience and QoE modeling in mobile systems, machine learning.

Education

Aalto University, Espoo, Finland   *Since:* June 2015

Doctoral Candidate in Networking Technologies School of Electrical Engineering

- Thesis Topic: *Mobile Network Characteristics and Performance Prediction from the Edge.*
- Advisors: Prof. Jukka Manner and Prof. Dr.-Ing. Jörg Ott.

University of Trento, Trento, Italy   Sep 2011 - Mar 2014

Masters of Science in Computer Science

- Topic: *Time Series Similarity Query Answering Using iSAX on MapReduce.*
- Adviser: Prof. Themis Palpanas

Hawassa University, Hawassa, Ethiopia   Oct 2005 - July 2008

Bachelor of Science Degree in Computer Science
(with Great Distinction)

- Topic: *Residents' Information Management System.*

Research Experience

Aalto University, Comnet, Finland   Jun 2014 - present
Doctoral Candidate and Researcher.
- Working on the PhD project #2 of METRICS-ITN project.
- Advisers: Prof. Jukka Manner and Prof. Dr.-Ing. Jörg Ott

University of Illinois Research Center, Singapore   Jul - Dec 2012
Junior Researcher
- Topic: *Attacks on GWAS privacy: A Data Mining Approach.*
  Mentor: Zhenjie Zhang and Yin (David) Yang

Research Visit

TU München, Germany - Visiting PhD Researcher.
Mentor: Dr. Vaibhav Bajpair
Topics:
- *Data Usage Pattern and User Behavior in Cellular Networks.*   Apr 1 - 13, 2019
- *Using Crowdsourcing Data for Adaptive Video Streaming in Cellular Network.* May - Jul 2018
- *Performance and Stability Analysis in Cellular Network.*   Sep - Nov 2017
- *Measuring Factors Affecting Latency in Cellular Networks.*   Mar - May 2017

Teaching Experience

Aalto University, Comnet, Finland   Jun 2014 - present
Teaching Assistance:
- Internet Traffic Measurements and Analysis   2015/16
- Protocol Design   2015
Bahir Dar University, Ethiopia   Sep 2010 - Aug 2011
Assistant Lecturer

– Taught bachelor level courses: (Data Communication and Computer Networking; Fundamentals of Programming with C++; Fundamentals of Database System with SQL)

  University of Gondar, Ethiopia   Sep 2008 - Sep 2010

  Graduate Assistant then promoted to Assistant Lecturer
  – Taught bachelor level courses: (Data Structure and Algorithm; Fundamentals of programming with C++; Software Engineering; Object Oriented programming with Java)
  – Committee services
    * Research and Publication committee member
    * Department Assembly Member
    * Graduate Students Project Coordinator

Industry Experience

Elisa Oyj, Helsinki, Finland   Oct 2016 - Feb 2017

PhD Research Intern.
– Topic: *Performance of Web Flows in Cellular Networks.*
  Mentor: Setälä Kim

Ethio Telecom, Ethiopia   Jul 2007 - Sep 2008

Junior Programmer
– Developed an Online Domain Name Registration System to Ethio-Telecom. Worked with team of 5 members.

Technical Skills

– **Programming languages & Scripts:** Java, Python, C++, PHP, JavaScript, Shell.
– **Data Analysis & Visualization:** Pandas, Numpy, R, Matplotlib, Seaborn.
– **Machine Learning & Big Data Frameworks:** Scikit-learn, Spark, Tensorflow, Apache Hadoop, MapReduce.
– **Database:** MySQL, SQL, MongoDB, PostgreSQL.
– **Networking Tools:** Mininet, Wireshark.
– **Operating Systems:** OS X, Linux, Windows.
– **Utilities:** vim, git, LaTeX

Conference Publication

1. Stefan Neumeier, Ermias Walelgne, Vaibhav Bajpai, Jrg Ott, Christian Facchi:
   "Measuring the Feasibility of Teleoperated Driving in Mobile Networks." Traffic Measurement and Analysis (TMA) conference, 2019 [32.3%, 21/65]

2. Alemnew Asrese, Ermias Walelgne, Vaibhav Bajpai, Andra Lutu, Özgü Alay, Jörg Ott: "Measuring Web Quality of Experience in Cellular Networks.", Passive Active Measurement Conference, 2019 [26.6%, 20/75]

3. Kasper Apajalahti, Ermias Walelgne, J Manner, E Hyvönen: "Correlation-Based Feature Mapping of Crowdsourced LTE Data", *IEEE International Symposium on Personal, Indoor and Mobile Radio Communications*, 2018 [45.2%, 349/772]

4. Ermias Walelgne, Kim Setälä , Vaibhav Bajpai, Stefan Neumeier, Jukka Manner and Jörg Ott: "Factors Affecting Performance of Web Flows in Cellular Networks." *IFIP Networking conference*, 2018 [24.4%, 55/225]

5. Ermias Walelgne, Jukka Manner , Vaibhav Bajpai and Jörg Ott: "Analyzing Throughput and Stability in Cellular Networks." *IEEE/IFIP Network Operations and Management Symposium* , 2018 [32.2%, 56/174]

6. Jörg Ott, Ljubica Karkkainen, Ermias Walelgne, Ari Keränen, Esa Hyytiä, Jussi Kangasharju: "On the sensitivity of geo-based content sharing to location errors." *IEEE/IFIP Wireless On-demand Network Systems and Services Conference*, 2017 [44.9%, 22/49]

Posters (Peer-review) Publications	1. <u>Ermias Walelgne</u>, Alemnew Asrese, Vaibhav Bajpai, Jörg Ott, Jukka Manner: "Using Crowdsourcing Data for Adaptive Video Streaming in Cellular Network", MobiSys, 2018.
	2. Alemnew Asrese, <u>Ermias Walelgne</u>, Andra Lutu, Ozgu Alay, Jörg Ott: "Measuring Web Latency in Cellular Networks." *INFOCOM*, 2018.
Thesis	1. Master thesis: "Time Series Similarity Query Answering Using iSAX on MapReduces". University of Trento, Italy, Mar 2014.
	2. Bachelor Thesis: "City Residentś Information Management System", Hawassa University, Ethiopia, Jul 2008.
Posters	1. <u>Ermias Walelgne</u>, Vaibhav Bajpai, Jörg Ott: "Using Crowdsourcing Data for Adaptive Video Streaming in Cellular Network." **Munich Internet Research Retreat, MIR3̂** , Raitenhaslach, Germany, Nov 2017.
	2. <u>Ermias Walelgne</u>, Jukka Manner, Vaibhav Bajpai, Jörg Ott: "Analyzing the Performance and Stability of Cellular Networks." **ACM Internet Measurement Conference (IMC)** , London, UK, Nov 2017.
	3. Stefan Neumeier, <u>Ermias Walelgne</u>, Vaibhav Bajpai Jörg Ott, Christian Facchi: " Ping on the Move." **ACM Internet Measurement Conference (IMC)** , London, UK, Nov 2017.
	4. <u>Ermias Walelgne</u>, Vaibhav Bajpai, Jörg Ott: "Measuring and Predicting The Performance of Cellular Links From Mobile Users Device." **Munich Internet Research Retreat, MIR3̂**, Raitenhaslach, Germany, May 2017.
	5. <u>Ermias Walelgne</u>: "Understanding the Characteristics of Cellular Network and Its Performance." METRICS Industrial Workshop at Ericsson, Espoo, Finland, Mar 2016.
	6. <u>Ermias Walelgne</u>, Jukka Manner, Jörg Ott: "Understanding Link Stability and Performance in Mobile Network." **5th International PhD school in Traffic Monitoring and Analysis**, Barcelona, Spain Apr 2015.
Talks and Presentation	1. "Factors Affecting Performance of Web Flows in Cellular Networks"- **RIPE 77**, Amsterdam, Netherlands, Oct 2018.
	2. "Factors Affecting Performance of Web Flows in Cellular Networks." - **RIPE NCC Regional Meeting** , Almaty, Kazakhstan, Sep 2018.
	3. "Why Browsing the Internet from Mobile Phone is so Slow? " - **At Elisa Research Team** , Helsinki, Finland, Jun 2017.
	4. "On Characterising and Prediction of Cellular Network Performance." - **Chair of Connected Mobility Doctoral Seminar**, Frauenchiemsee, Germany, Oct 2017.
	5. "Factors Affecting DNS and TCP Latency in Cellular Networks." - **Chair of Connected Mobility Doctoral Seminar**, Munich, Germany, Apr 2017.
	6. "Characteristics and Performance of Cellular Network." - **Chair of Connected Mobility Doctoral Seminar**, Innsbruck, Austria, Oct 2015.

Projects	– **METRICS:** Measurement for Europe: Training and Research for Internet Communications Science. FP7-PEOPLE Contract no. 607728. 2014 - 2017 – Worked on WP 1 and contributed for deliverable 1.1, 1.2, 1.3.
Training and Certificates	– Introduction to Network Operations: UNIX/Linux, Networking and DNS, Internet Society May 2019 – Neural Networks and Deep Learning, Coursera Sep 2018 – 4G Network Essentials, edX May 2018 – Strategic Management Seminar, IE Business schoolIE University, Spain Jun 2016 – ITC0002, Cyber Security, Tallinn University of Technology, Estonia Jun 2015 – CISCO Certified Network Association (CCNA) Exploration Jul 2009
Professional Services	**Technical Program Committee:** – AFRICOMM - Workshop on Internet measurements research in Africa 2018, 2019 **External Reviewer:** – IEEE Wireless Communications and Networking Conference (WCNC) 2018 – ACM SIGCOMM Computer Communication Review (CCR) Artefacts Review 2017 **Shadow PC:** – ACM IMC - Internet Measurement Conference, Amsterdam, Netherlands 2019 – ACM IMC - Internet Measurement Conference, Boston, USA 2018 – TMA - Network Traffic Measurement and Analysis Conference, Vienna, Austria 2018 – ACM IMC - Internet Measurement Conference, London, UK 2017
Grants and Awards	– RIPE77 Academic Cooperation Initiative Recipient - Amsterdam, Netherlands 2018 – FIP/IEEE NOMS 2018 Student Travel Grant for Authors, Taipei, Taiwan 2018 – ACM student travel grant for IMC conference, London, UK. 2017 – ACM student travel grant for CoNEXT conference, Heidelberg, Germany. 2015 – Merit Prize - for achieved remarkable results, University of Trento, Italy. 2015 – Marie-Curie Initial Training Network grant for three years of PhD study. 2014 – Opera Universitaria Scholarship for Masters in Computer Science, University of Trento, Italy 2011 – Academic Award for Top Performing students in Natural Science faculty , Hawassa University 2007 – Graduated with Great Distinction, faculty 2nd top scorer , Hawassa University 2010
Languages	– English fluent – Amharic native – Italy basic – Finnish basic
References	Available up on request