MELES GEBREYESUS WELDEGEBRIEL

(he/him)

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My name is Meles G. Weldegebriel. I am a **Communication Engineer** with keen interest in wireless and mobile communication systems and their applications. I am currently working on a coexistence of heterogeneous wireless systems via Radio Frequency Interference mitigation systems. Under Professor Neal Patwari at Washington University in St. Louis (WashU), I am conducting research in pseudonymetry as part of my PhD project work. Pseudonymetry is a protocol for the coexistence between passive radio receivers (like satellite downlink and radio astronomy) and other wireless communications systems. Pseudonymetry securely enables passive receivers to identify, report, and even force an interfering transmitter to stop transmitting, even when the interfering data is too low in signal power to demodulate, all without violating user privacy. Off-the-clock, I enjoy working with Engineering **Data Analysis and Statistics**.

WORK EXPERIENCE

Graduate Research Assistant
SPAN-LAB@WashU
Washington Unversity in St. Louis, MO, USA
February 2021 - Present

Dean
Overall Management and Leadership of Mekelle Institute of Technology which enrolls the top students in the country via entrance exams.
Mekelle University, Mekelle, Ethiopia
April 2014 - August 2020
Key Achievements: 60% increase in the number of R&D centers and more than 65% increase in student enrollment and diversity.

Head and Lecturer
Overall Management and Leadership of the department of Electrical and Electronics Engineering
Mekelle University
November 2009 - July 2011
Key Achievements: Introduced new teaching-learning quality assurance system and exam evaluation techniques.

Head and Lecturer
Overall Management and Leadership of the department of Information and Communication Technology(ICT)
Mekelle University
December 2011 - January 2013
Key Achievements: Established regional CISCO Networking Academy in the Institute.

EDUCATION

PhD student in Electrical Engineering
I do research on the coexistence of heterogeneous wireless systems
Washington University in St. Louis, MO, USA
February 2021 - Present

MS in Engineering Data Analytics and Statistics
Learning advanced expertise in the use and application of cutting-edge software and analytical tools to collect, analyze, model and optimize data.
Washington University in St. Louis, MO, USA
January 2023 - Present

M.Tech in Electrical Engineering with specialization in Communications Engineering
Learned core courses in communications engineering including: digital communications, antennas, digital signal processing, statistical signal analysis and wireless and mobile systems
Indian Institute of Technology Bombay, India
July 2007 - August 2009

BSc. in Electronics and Communications Engineering
Learned basics of communications engineering, analog and digital electronics, basics of programming and Engineering Mathematics.
Mekelle Institute of Technology, Mekelle, Ethiopia
November 2002 - July 2007

RESEARCH AND DEVELOPMENT

Pseudonymetry: Precise, Private Closed Loop Control for Spectrum Reuse with Passive Receivers

Meles G. Weldegebriel et al.
2022 IEEE International Conference on RFID (RFID)
doi: 10.1109/RFID54732.2022.9795976

Watermarking of OFDM for Pseudonymetry: Analysis and Experimental Results

Meles G. Weldegebriel et al.
IEEE ICC 2024

Dynamic Spectrum Allocation in Cognitive Radio

Masters Thesis: I developed an algorithm to dynamically allocate spectrum to nodes from a set of randomly generated time-frequency rectangular blocks.

Monitoring and Assessment of Power Quality Problems in Ethiopia

This is an ongoing project where we assess the current Power Quality (PQ) profile of Ethiopia, investigating the occurrence, causes, and consequences of PQ issues for different types of customer categories.
www.mu.edu.et/Leake E. et al.

Techno-economic Analysis of Wireless and Mobile Technologies in Ethiopia

In this project, I study the technological and economical feasibility of existing wireless and mobile systems in Ethiopia with regard to the current and future traffic demands in the country.
www.mu.edu.et/Meles G. et al.

Design and Implementation of Low-cost Portable Metal Detector

In this project, I developed and tested a low-cost metal detector for deployment to search for landmines in the war-hit Northern Ethiopia.
www.mu.edu.et/Meles G. and G/her N.

AWARDS AND RECOGNITION

- Full Scholarship at Washington University in St. Louis, Feb. 2021 - present.
- Full Scholarship at Indian Institute of Technology Bombay, Mumbai, India, July 2007 - August 2009.
- Received recognition as top student in my department at Mekelle Institute of Technology.
- Full Scholarship at Mekelle Institute of Technology, Mekelle, Ethiopia, November 2002 - July 2007.
- Received recognition as top scoring student in the Ethiopian school leaving exam.
- Full Scholarship at Kelamino Special Highschool, Mekelle, Ethiopia, November 1998 - June 2002.

TECHNICAL SKILLS & LANGUAGES

Programming

●●● Python
●●● MATLAB
●○○ C and C++

Other skills

- Leadership and management
- Data analytics

Languages

●●● Tigrigna
●●● English
●●○ Amharic

PERSONAL INTERESTS

Machine Learning | Data Analytics | Computer Programming | Football