MELES GEBREYESUS WELDEGEBRIEL

(he/him)

07/14/1985 (Bizet, Tigray, Ethiopia)
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My name is Meles G. Weldegebriel. I am a **Communication Engineer** with experience in Wireless and Mobile Communications. My current ambition is to conduct research on **wireless systems and their applications**. More pertinently, I am interested in coexistence of heterogeneous wireless systems via Radio Frequency Interference mitigation systems. As part of my PhD project work, I am currently doing research in Pseudonymetry - a protocol for the coexistence between passive radio receivers (e.g., radio astronomy, satellite downlink) and terrestrial 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 **Machine Learning systems** and their applications in 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 250 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

M.Tech in Electrical Engineering with specialization in Communications Engineering
Learned core courses in Communications Engineering including: digital communications, antennas, information theory and coding, digital signal processing, statistical signal analysis and wireless and mobile communication 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

Certified Telecommunications Network Specialist
Learned fundamentals of Telecommunications Networking.
Teracom Training Institute, Naveda, USA
April 2013 - June 2013

CISCO Certified Network Associate, CCNA
CISCO Networking Academy
April 2013 - June 2013

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

Dynamic Spectrum Allocation in Cognitive Radio

Masters Thesis: We developed an algorithm to dynamically allocate spectrum to nodes from a set of randomly generated time-frequency rectangular blocks.
Melesg.com/resume
github.com/Meles74/resume

Monitoring and Assessment of Power Quality Problems in Ethiopia

In this project, we assess the current Power Quality (PQ) profile of Ethiopia, investigating the occurrence, causes, and consequences, and will propose optimal solutions for various PQ issues for different types of customers categories.
www.mu.edu.et/Leake E. et al.

Mobile Phone Based Automated Malaria Diagnosis Using Machine Learning: A case study in Northern, Ethiopia

In the project, we have designed, developed and tested automated malaria diagnosis system using machine learning algorithm. High resolution microscopic images are feed to the mobile phone based system that assists in detecting malaria in patients. Blood samples were collected from malaria prone regions in Northern Ethiopia.
www.mu.edu.et/H.kiros A. and Meles G.

Techno-economic Analysis of Wireless and Mobile Technologies in Ethiopia

In this project, we 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, we 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 Technolgy 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 ●○○ C and C++
●●● MATLAB

Other skills

Leadership excel word
computer networking linux html
Data visualization and analysis

Languages

●●● Tigrigna ●●○ Amharic
●●○ English

PERSONAL INTERESTS

Machine Learning | Data Science
Computer Programming | Football