Boaz Berhanu Tulu

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CURRENT

PhD in Agricultural and Biological Engineering '26
Agricultural and Biological Engineering Department
University of Florida

PROFESSIONAL EXPERIENCE

Graduate Research Assistant, University of Florida, Gainesville, FL, USA
August 2023 – Present
- Conducting AI and computer vision research focused on agriculture and water management solutions.
- Engaging in collaborative projects to develop innovative tools and methodologies that enhance resource efficiency.

Instructor, Udemy (Python Programming in Amharic)
- Developed and instructed a 3.5-hour Python programming course presented entirely in Amharic, aimed at improving accessibility for native speakers.
- Covered fundamental Python concepts, practical coding exercises, and best practices for real-world application.

Lecturer, Department of Electrical and Computer Engineering, Jimma University, Ethiopia
July 2018 – June 2023

- Teaching different Computer Engineering courses to undergraduate students such as: Introduction to programming, Computer Security, Data base management, and Engineering Entrepreneurship.
- Advising students on their senior AI-based project and other academic and non-academic issues.

CTO and Co-founder, Debo Engineering PLC, Jimma, Ethiopia
February 2019 – Ongoing
- Monitors daily business activities, improves overall functions, trains staff, manages budgets, develops strategic plans, and communicates business goals.
- Leads the AI model development and oversees nationwide data collection for an AI-based crop disease detection application.

Director, Artificial Intelligence Center at Jimma University, Ethiopia
June 2022 – June 2023
- Lead the AI Center at the university, overseeing research projects, fostering collaborations, and promoting the development and application of artificial intelligence in various fields.

- Conducting PR, Coordination, and promotion of the product samples and holding a workshop with international organizations, NGOs and private companies.

Co-founder and General Manager, Omishtu Joy Agritech PLC, Addis Ababa, Ethiopia
December 2020 – May 2022
- Prepared all necessary documents to register the enterprise with a capital of 2.5 million Ethiopian Birr.
- Directed AI-based automated soil classification and crop recommendation efforts for farmers, leading both the AI model development and hardware

Business Coach, Iceaddis IT Consultancy PLC, Addis Ababa, Ethiopia
- Provide personalized coaching to startup founders and teams in the water and sanitation sector.
- Financial Linkage: Facilitate connections between startups and financial institutions to secure funding and investment.
- Training Programs: Conduct training sessions on business conduct, business plan development, and strategic planning.
- Technical Support: Assist startups in developing and maintaining their websites and digital presence.
- Networking: Create opportunities for startups to network with industry experts, potential partners, and investors.
- Resource Provision: Supply startups with essential resources and tools to enhance their business operations and growth potential.

OTHER UNIVERSITY SERVICES
- **Chair, Undergraduate Research Evaluation Committee** | Department of Electrical and Computer Engineering | November 2021 – December 2022
  - ✓ Led the evaluation of graduate research projects, ensuring high academic standards and rigor.
  - ✓ Coordinated with faculty members and external examiners for comprehensive research assessments.
- **Member,** Proposal Review Committee | Department of Electrical and Computer Engineering
  - ✓ Reviewed and provided feedback on research proposals, contributing to the academic development of students and faculty.
- **Member**, Exam Review Committee | Department of Electrical and Computer Engineering
  - ✓ Participated in the review and validation of examination questions and processes to maintain the integrity of the evaluation system.

EDUCATION AND FELLOWSHIPS

- **Mandela Washington Fellow**, 2022 –Leadership in Business Track at **Purdue University,** USA
- **Master of Science in Computer Engineering** | Jimma University, Ethiopia | Nov 2021 Cumulative GPA: 3.84/4.00: Thesis: Very Good

- **Bachelor of Science in Electrical and Computer Engineering** | Jimma University, Ethiopia | July 2017: Cumulative GPA: 3.25/4.00

PEER REVIEWED PUBLICATIONS

1. **Tulu, B. B.,** Teshome, F., Ampatzidis, Y., Hailegnaw, N. S., Bayabil, H. K. (2025). AgriSenAI: Automating UAV thermal and multispectral image processing for precision agriculture. *SoftwareX*, 30, 102083. DOI: 10.1016/j.softx.2025.102083
2. Hussain, S., Teshome, F. T**., Tulu, B. B.,** Awoke, G. W., Hailegnaw, N. S., Bayabil, H. K. (2025). Leaf area index (LAI) prediction using machine learning and UAV based vegetation indices. European Journal of Agronomy, XX, 127557. DOI: 10.1016/j.eja.2025.127557
3. Adege, A. B., Admas, M. F., Tehone, Y., **Tulu, B. B**., Endalamaw, E. T. (2025). AI-Powered Human Activity Detection and Tracking in Dense Crowds Using YOLOv8-DeepSORT. IET Image Processing, 19(1), e70227.

PRESENTATIONS

- **ASABE 2024 Robotics Competition**, representing the University of Florida with a strawberry pruning robot project, Anaheim, California, USA, July 2024.
- **Poster Presentation at the ABE UF Department Annual Student Poster Presentation**, Gainesville, Florida, USA, March 2024.
- **Invited Speaker** at the 9th Water Institute Symposium, "Streamlining Precision Irrigation: A Decision Support Tool," University of Florida, Gainesville, Florida, USA, February 20-21, 2024.
- **Speaker** at the Artificial Intelligence in Agriculture Conference, "Enhancing Agricultural Water Management: A Desktop Application Integrating UAV Imagery and Ground Sensing for Precision Irrigation," Texas A&M University, College Station, Texas, USA April 15-17, 2024.
- **Poster Presentation** at the North Florida Research and Education Center 2024 Spring Showcase, "IrrigSense: A Decision Support Tool to Streamline Precision Irrigation," Quincy, Florida, USA April 5, 2024.
- **Workshop Leader** at Jimma American Corner, "Introduction to Python Programming for Artificial Intelligence," Jimma, Ethiopia, March 13, 2022.
- **Speaker** at Bahir Dar University, "Application of Artificial Intelligence for Multidisciplinary Research," Bahir Dar, Ethiopia, May 20, 2022.
- **Speaker** at Jimma University, "Data Science Using Python: Techniques and Applications," Jimma, Ethiopia, November 2021.

ACCOMPLISHMENTS AND AWARDS
- 2017: **Best Final-Year Project Award**
  Awarded for the best final-year project at Jimma University, Ethiopia.
- 2019: **Green Innovation Award Winner,** German Development Cooperation (GIZ), Ethiopia

Recognized for contributions to sustainable and environmentally friendly innovation, Addis Ababa, Ethiopia.

- 2020: **MEST Africa Community Vote Winner** Meltwater Entrepreneurial School of Technology (MEST), Ghana
  Won for innovative AI-based coffee disease detection application, Addis Ababa, Ethiopia.
- 2021: **KOICA MinT Innovation Award Winner,** KOICA, Ethiopia
  Honored for exceptional innovation with AI-based soil classifier and crop recommender device by the Korea International Cooperation Agency (KOICA) and the Ministry of Innovation and Technology (MinT), Addis Ababa, Ethiopia.
- 2021: **Best Innovation from All Ethiopian Universities Award,** Minister of Education, Ethiopia
  Received the award for the best innovation among all Ethiopian universities for AI-based coffee disease detection application, Addis Ababa, Ethiopia.
- 2021: **Bruh UNDP Competition $5,000 Award Winner,** UNDP, Ethiopia
  Recognized for outstanding innovation and entrepreneurship with AI-based soil classifier and crop recommender device by the United Nations Development Program (UNDP), Addis Ababa, Ethiopia.
- 2022: **Coffee Innovation $50,000 Winner** German Development Cooperation (GIZ), Ethiopia
  Awarded $50,000 for AI-based coffee disease detection application, Addis Ababa, Ethiopia.
- 2022**: Sankalp World Bank Innovation Winner**, World Bank, Kenya
  Won the Sankalp World Bank Innovation competition, receiving a $25,000 prize for Agritech innovation with AI-based soil classifier and crop recommender device, Nairobi, Kenya.
- 2022: **Mandela Washington Fellowship Alumni,** Secretary of state, USA
  Awarded the prestigious Mandela Washington Fellowship, recognizing promising young African leaders, West Lafayette, IN, USA.

CERTIFICATES

- **US Department of State**- Certificate of Completion, the Mandela Washington Fellowship for Young African Leaders, July 2022, West Lafayette, IN, USA.
- **Purdue University**- Certificate of Completion, the Mandela Washington Fellowship, Leadership in Business Track, 2022.
- **NVIDIA Corporation (NVDA)**- Fundamentals of Accelerated Computing with CUDA python, University of Florida, USA
- **NVIDIA Corporation (NVDA)-** Fundamentals of Deep Learning, University of Florida, USA
- **NVIDIA Corporation (NVDA)-** Generative AI with Diffusion Models, University of Florida, USA
- **University of Florida**- Intellectual Property for Innovators, Gainesville, USA

CHARITY AND COMMUNITY SERVICE ACTIVITIES

- **Volunteer**, North Florida Sewing Center, Gainesville, Florida

Sewing reusable pads for women to support menstrual health and hygiene initiatives, from April 2024 to the present.

- **Member**, Ethiopian Red Cross Society at Jimma, Ethiopia
Organized and participated in humanitarian activities such as blood donation programs.
- **Volunteer Teacher,** taught high school students in Jimma during summer break times since 2016 and continuing. Jimma, Ethiopia
- **Awareness Creation**, Jimma, Ethiopia
Provided successful awareness creation on the preventive and control measures of the COVID-19 pandemic to the community of Jimma Administrative town in April 2020.
- **Technology Volunteer**, Sew Le Sew Charity Organization, Jimma, Ethiopia
Providing technology support, including setting up and maintaining computer systems, training staff and volunteers on digital tools, and developing a website to increase the organization's outreach and efficiency, since October 2020 and continuing.