

Tadesse K. Bahiru

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EDUCATION

Ph.D. in Computer Science <i>University of Houston, Houston, TX</i>	Expected Dec 2028 GPA 3.60/4.0
M.Tech in Information Technology <i>Parul University, Vadodara, India</i>	May 2018 GPA 8.29/10.0
BSc in Computer Science <i>Wollo University, Dessie, Ethiopia</i>	July 2015 CGPA 3.78/4.0

PROJECTS

- Community Responsive Algorithms for Social Accountability (CRASA) Sep 2024 – Present
- Designed and implemented an LLM-assisted evaluation pipeline to audit AI model codebases across transparency, documentation quality, testing practices, and data protection risks
 - Developed rubric-based evaluation metrics aligned with sociotechnical and ethical AI principles, translating qualitative concerns into operational assessment criteria
 - Evaluated 20 large-scale open-source AI model repositories, producing structured reports to inform design decisions and reduce manual review effort
- Consortium for Translational and Precision Health (CTPH) Jan 2025 – Sept 2025
- Designed dataset evaluation framework to assess data quality, fairness, privacy risk, and regulatory compliance in clinical ML pipelines
 - Performed fairness evaluation across sensitive demographic attributes to identify potential structural bias and disparate impact in healthcare datasets
 - Conducted privacy risk analysis including disclosure risk assessment and inference-based privacy evaluation for tabular medical data
 - Built a RAG system to automatically review dataset documentation for ethical alignment, data governance, and responsible data usage

EXPERIENCE

- Teaching Assistant** Sept 2025 – Present
Department of Computer Science, University of Houston *Houston, TX*
- Assisted courses including Programming and Data Structures (COSC 2436) and Data Science II (COSC 4337)
 - Supported 50+ students through group and individual guidance
 - Led labs, held office hours, and graded exams and assignments
- Research Assistant** Jan 2024 – Sept 2025
Computational Biomedicine Lab, University of Houston *Houston, TX*
- Conducted Responsible AI research supporting CRASA and CTPH, focusing on model accountability and dataset auditing
 - Implemented evaluation workflows for codebases and tabular datasets, ensuring reproducible experimental results
 - Contributed to manuscript development by drafting methods, experimental setup, and results sections
- Lecturer** Sep 2019 – Dec 2023
Department of Information Technology, Wollo University *Dessie, Ethiopia*
- Taught Introduction to AI, Database Systems, and Internet Programming
 - Developed a curriculum and introduced hands-on projects
 - Supervised senior projects and guided applied student research

PUBLICATIONS AND PREPRINTS

- Hailemariam M. Teshager and **Tadesse K. Bahiru**, “Enhancing Privacy and Utility in Synthetic Data: A Local Contrastive Learning Approach with Differential Privacy,” *In submission*, 2026
- **Tadesse K. Bahiru** and Ioannis A. Kakadiaris, “Codecard: Leveraging LLMs to Evaluate AI Model Code Development with the System Card Framework,” *14th International Conference on Model and Data Engineering (MEDI 2025)*, Cairo, Egypt, November 2–4, 2025.
- **Tadesse K. Bahiru**, Carlos Ordonez, and Ioannis A. Kakadiaris, “Data Scorecard: A Comprehensive Assessment of Data Quality, Fairness, Privacy, and Compliance,” *IEEE DSAA 2025*, Birmingham, UK, October 9–13, 2025.
- **Tadesse K. Bahiru**, Natnael T. Sinshaw, and Hailemariam M. Teshager, “Auditing and Mitigating Intersectional Bias in Gender Classification: A Data-Centric Approach,” *ICT4DA 2025*, Bahir Dar, Ethiopia, November 21–23, 2025.
- Natnael T. Sinshaw and **Tadesse K. Bahiru**, “Blog Data Showdown: Machine Learning vs Neuro-Symbolic Models for Gender Classification,” *ICT4DA 2025*, Bahir Dar, Ethiopia, November 21–23, 2025.
- **Tadesse K. Bahiru**, Haileleol Tibebu, and Ioannis A. Kakadiaris, “AI Data Development: A Scorecard for the System Card Framework,” *ITAI 2025*, Haryana, India, January 24–25, 2025.
- **Tadesse K. Bahiru**, V. S. Manjula, Tadesse Birara Akele, Engdaw Ayalew Tesfaw, and Tadesse Destaw Belay, “Mining Road Traffic Accident Data for Prediction of Accident Severity,” *IDCIoT 2023*, Bengaluru, India, January 5–7, 2023.
- Sileshi B. Haile, Tadesse D. Belay, and **Tadesse K. Bahiru**, “Deep Learning-Based Emotion Classification for Amharic Texts,” *ICAST 2023*, Bahir Dar, Ethiopia, August 25–27, 2023.
- **Tadesse K. Bahiru**, Dheeraj Kumar Singh, and Engdaw Ayalew Tessfaw, “Comparative Study on Data Mining Classification Algorithms to Predict Road Traffic Accident Severity,” *ICICCT 2018*, Coimbatore, India, 2018.
- Engdaw A. Tessfaw, B. Ramani and **Tadesse K. Bahiru**, “Ethiopian Banknote Recognition and Fake Detection Using Support Vector Machine,” *ICICCT 2018*, Coimbatore, India, 2018.

PRESENTATIONS

- **Tadesse K. Bahiru** and Ioannis A. Kakadiaris, “Evaluating Healthcare Datasets for Responsible AI Development: Scores for Fairness, Privacy, and Compliance”, TMC AI Summit, Houston, Texas, February 20-21, 2025.

REVIEWING AND SERVICE

- Reviewer, IEEE BHI 2025
- Reviewer, IEEE Access Since 2024

LEADERSHIP

Chairman and Secretariat, IT Department Committee	Dec 2021 – Nov 2023
<i>Wollo University, Information Technology Department</i>	<i>Dessie, Ethiopia</i>

- Led curriculum development initiatives and workshops to improve students’ readiness for data science jobs and internships
- Facilitated communication and coordinated decisions as department secretariat and committee member
- Organized online training sessions on emerging technologies and industry practices