YEABSIRA Mersha Tesfaye

Website: https://yeabwang.github.io/ **Linkedin:** linkedin.com/in/yeabsira-tesfaye

Github: github.com/yeabwang

I study the brain and deep learning together, with a commitment that intelligence is the capacity to continually adapt a model of the world to a specific context with limited data and compute, and that progress in AI will come from discovering the learning algorithms themselves rather than from scaling monolithic pretrained models. Continual learning, meta-learning, and personalization are, for me, connected dots of this brain-inspired vision. My current work focuses on continual personalization learning, growing toward reinforcement learning and biologically plausible adaptation as foundations for systems that learn individually and efficiently across a lifetime.

Education

Beijing Institute of Technology Sep 2024 – Jul 2028 (expected)

Bsc. Computer Science and Technology

Beijing Municipal Government Scholarship (2024–present).

Relevant coursework: Introduction to Artificial Intelligence; Brain Science & Brain-Inspired Intelligence.

Tsinghua University Jul 2025

Summer School for Generative AI

Relevant coursework: Jie Tang (The Road to AGI), Zhiyuan Liu (LLM Agents), Yuxiao Dong (LLMs and Multimodal Models), Wenguang Chen (Distributed Systems for Large Models).

Research

Independent research — Beijing Institute of Technology Nov 2025 - present

Advised by **Prof. Song Dawei** and **Prof. Song Dandan**, School of Computer Science and Technology, BIT

- Lead author on a continual personalization framework for large language models.
- Ongoing investigation on personalized safety guardrails in LLMs — how a continual adaptation system can shape user-specific protective boundaries

Research Intern — Synheart AI Oct 2025 – Mar 2026

- Co-authored the Human State Interface (HSI) framework defining Human State Vectors — time-scoped, multidimensional representations of physiological, cognitive, and behavioral state — and a canonical interface for exchanging such state across AI systems.
- Built emotion and stress inference pipelines over WESAD, UBFC, MMASH, and DREAMER; implemented HRV-based feature extraction and contributed to affective model training and evaluation.
- Contributed to syni-cli , Synheart's open-source Python SDK and CLI for persona-driven, schema-validated LLM interactions with safety constraints and token-budget tracking.

Publications

- **Tesfaye, Y. M.** (2026, May). How you say it matters: Personalizing LLM responses via dual time-scale closed-loop adaptation. arXiv:xxxx.xxxxx.
- **Tesfaye, Y. M., & Synheart AI Team.** (2026, January). Human state interface infrastructure (White paper). https://synheart.ai/research/synheart-hsi
- **Hachelaf, M. Z., Lin, K., Yeo, J. W. J., Su, Q. H., Santosa, C. J., Li, Z., Tesfaye, Y. M., Xiao, H., Louwren, A. R., & Huang, T. K.** (2025, February). AM-SDS Nexus 7 — Autonomous Martian seed deployment system. https://doi.org/10.13140/RG.2.2.32521.61286

Selected Projects

- **PathoFusion — Axillary lymph node metastasis classification for breast cancer diagnosis** (April – July 2025) **Tesfaye, Y. M.**, Prof. Xiangfu Zhang. Designed and evaluated a deep learning pipeline for histopathological image classification. Third Prize, Qingju AI Artificial Intelligence+ Special Competition (青橘AI"人工智能+"专项赛), July 2025.
- **rubric_ai — LLM-agent system for automated grading of code repositories** (January 2026 – Present) **Tesfaye, Y. M.**, Mathew, S., Nguyen, N. T., Yoselia, C. Multi-agent architecture that evaluates student code submissions against instructor-defined rubrics. Mentored by Prof. Song Dandan. Finalist, 16th National E-commerce "Innovation, Creativity & Entrepreneurship" Challenge (三创赛), 2026. https://rubric-ai.onrender.com

Awards & Distinctions

- Innovation & Entrepreneurship Talent Award (双创英才奖), Beijing Institute of Technology (December 2025)
- Third Prize, Qingju AI Artificial Intelligence+ Special Competition (青橘AI"人工智能+"专项赛) (July 2025)
- Beijing Municipal Government Scholarship, Beijing Institute of Technology (2024 – present)

Industry Experience

Software Engineer & Co-founder — Gofere Travels · MMCY Tech · Chiropedic (2021–2024). Three years of web development and software engineering across international companies. Co-founded and led a travel-booking and software company, managing operations, development, and team.

Skills

- **Languages:** Python, TypeScript, C++
- **ML/AI:** PyTorch, scikit-learn, Hugging Face; data processing; literature review; affective-computing pipelines (HRV, EDA, multimodal fusion)
- **Spoken Languages:** English (C1 / CEFR), Mandarin Chinese (intermediate)