

TESFAYE YEABSIRA MERSHA

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CS student and AI researcher with experience in web development and open-source projects. Research focuses on NeuroAI, multimodal user modeling, human state inference, and adaptive AI systems using physiological and wearable data. Developing state-aware AI that adapts to cognitive and affective states. Seeking AI/ML research internships to contribute to real-world projects and gain hands-on experience.

Education

Beijing Institute of Technology

Sep 2024 - Present

Bsc. Computer Science and Technology

Awarded Beijing Municipal Government Scholarship

Relevant Coursework: Introduction to Artificial Intelligence and Brain Science and Brain Inspired Intelligence

Tsinghua University

Jul 2024

2025 Summer School for Generative AI

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

Research Experience

Researcher | Synheart AI

Oct 2025 – Present

- Co-authored multimodal Human State Inference research using wearable and mobile sensor data.
- Built syni-cli, a schema-validated LLM framework with persona enforcement, output validation, safety rules, token control, and OpenAI/local model support.
- Developed emotion and stress inference pipelines across WESAD, UBFC, MMASH, and DREAMER datasets.
- Implemented HRV-based feature extraction and contributed to affective model training and evaluation.

Publications

Human State Interface Infrastructure

White Paper

Developed the SynHeart HSI framework to compute Human State Vectors (HSV)—time-scoped, multidimensional representations of physiological, cognitive, and behavioral states—and a canonical interface for exchanging human-state information across systems.

Link: <https://synheart.ai/research/synheart-hsi>

Projects

Syni-cli

Adaptive AI

Python SDK & CLI for persona-driven, schema-validated LLM interactions

Designed versioned behavioral contracts, schema-first validation, safety constraints, and budget tracking.

Link: github.com/synheart-ai/syni-cli

Pichu

Agent

A terminal based coding agent has Composable tool stack, Sub-agents & task orchestration, MCP ecosystem, Context and session management and related features.

Link: <https://github.com/yeabwang/pichu>

Richu

Agent

AI-powered grading platform using LLM agents to evaluate code repositories against instructor-defined rubrics, analyzing architecture, documentation, testing, and code quality beyond unit tests.

Link: github.com/yeabwang/rubric_ai

Open source

Claude Code Security Reviewer (Anthropic)

Fixed infinite-recursion temp cleanup bug and added PowerShell-safe tool-call translation.

Youtu-Agent (Tencent Cloud ADP)

Exposed the hidden Memory layer to agents, enabling extended tool capabilities.

Others

Honors and Awards

- Innovation and Entrepreneurship Talent Award (双创英才奖), Beijing Institute of Technology, Dec 2025
- Third Prize, Qingju AI Artificial Intelligence+ Special Competition (青橘AI“人工智能+”专项赛), Jul, 2025

Professional & Startup Experience

3+ years in web development and software engineering, including co-founding and leading a travel-booking and software company handling operations, development, and team management.