Zachary Gray

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EXPERIENCE

AI Researcher, The University of Tulsa *May 2023 – Present*

- Proposed and implemented a framework to capture implicit user preferences embedded in casual commands; results published at the RaD-AI Workshop at AAMAS 2025 and presented in Detroit.
- Build multi- and single-agent LLM negotiation protocols using novel orchestration architectures and fine-tuning to augment goal-aligned human-agent coordination.
- Lead implementation on ongoing fine-tuning research: hypernetwork-gated LoRA steering negotiation behavior.
- Presented LODA, an architecture for LLM agents that make principled deviations from instructions to stay mission-aligned (framed for space robotics), to researchers at NASA JPL (March 2026).

Teaching & AI Curriculum Development, The University of Tulsa & Hendrix College *Jan 2022 – Present*

- Leading creation of an Introduction to AI course launching at TU and Oklahoma partner high schools in Fall 2026; building an LLM-assisted deck engine producing themed decks, handouts, entry/exit tickets, and teacher guides.
- Co-developed a Foundations of Machine Learning course with TU AI/ML faculty.
- Taught Artificial Intelligence, Database Systems, and Fundamentals of Algorithms; TA'd Intro to Programming (3x) for 40+ students per semester through lectures, labs, and office hours in Python and Java.

Co-Founder, Bonsai *2026 – Present*

- Building Bonsai (joinbons.ai), a practice-management suite of AI tools that automate clinic busywork (exam notes, HIPAA compliance, patient outreach, etc.) so teams focus on patients; live at its first practice, with more signed up.
- Sole technical founder alongside a practicing orthodontist: own discovery, design, build, and deployment end to end, including rebuilding a client practice's website from scratch.

Cybersecurity SOC Engineer, The University of Tulsa *May – Aug 2025*

- Automated BloodHound scans, scheduling, and user onboarding, cutting manual analyst effort 90%+ and enabling remediation tracking over time.

PROJECTS

- **Synapse:** distributed personal computer and shared agent brain, the backbone for a fleet of personal agentic software: three machines (GPU node for local-model inference, always-on hub for scheduled agent jobs, laptop for development) act as one computer over Tailscale, every capability reachable from any device, phone included.
- **HyprMac:** brings the keyboard-driven tiling window-manager workflow pioneered on Linux to macOS; public, installable via Homebrew. github.com/zacharytgray/HyprMac
- **Husk:** a personal App Store: describe an app to Claude from any device, even a text at dinner, and minutes later a native SwiftUI iOS/macOS app is installed and running; built on Synapse so each machine does what it is best at.
- **Grove:** a tended home for every active project: keeps context organized, current, and agent-ready so any agent can pick up work cold. heygrove.net

More at github.com/zacharytgray.

PUBLICATION

Peasley, D., Gray, Z., & Sen, S. (2025). Disobedience for a Cause: Leveraging Implicit Objectives in User Plans by LLM Surrogates. RaD-AI Workshop at AAMAS 2025, Detroit, MI.

EDUCATION

The University of Tulsa *Tulsa, OK*

Ph.D. in Computer Science (in progress), Graduate GPA 4.00 *Expected May 2029*

B.S. in Computer Science, Magna Cum Laude, GPA 3.82; Minors in Mathematics & Psychology *May 2025*

TECHNICAL SKILLS

AI/ML: LLM agents & harnesses, fine-tuning (LoRA/PEFT), machine learning, self-hosted inference (Ollama)

Languages: Python, Go, Swift, Java, TypeScript, C#

Frameworks & Tools: Docker, Git, Tailscale, Next.js, SwiftUI, Unity, macOS/Linux, self-hosting

Certifications: Claude 101, AI Fluency: Framework & Foundations (Anthropic Claude Academy, 2026)