

Robert Leggieri

APPLIED AI | ML ENGINEERING | TECHNOLOGY LEADERSHIP

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PROFESSIONAL SUMMARY

Technology leader with an M.S. in Artificial Intelligence from The University of Texas at Austin and over two decades of systems ownership. Builds practical, secure, and auditable AI solutions across natural language processing, speech, computer vision, and data engineering. Combines hands-on model implementation with operational judgment, security awareness, and cross-functional delivery.

TECHNICAL SKILLS

AI / ML: PyTorch, scikit-learn, Hugging Face Transformers, CNNs, multimodal learning, model evaluation, LoRA / QLoRA

Data / Engineering: Python, NumPy, Pandas, OpenCV, SQL / SQLite, REST APIs, ETL pipelines, pytest, Git

Systems / Automation: PowerShell, Windows Server, network and security operations, workflow automation, vendor and infrastructure strategy

SELECTED AI PROJECTS

Text-Prosody Alignment: The "I'm Fine" Effect

Graduate course research project, The University of Texas at Austin

- Created the Alignment Discrepancy Score (ADS) across 189 DAIC-WOZ interviews; sentiment-ADS reached 0.62 cross-validated AUC, above audio-only at 0.49 but below text-only at 0.70.
- PHQ-elevated sessions showed a tighter ADS distribution with fewer high-ADS outliers; a threshold selected for case detection achieved 80% sensitivity.
- Developed and publicly released [text-prosody-evidence](#), a separate dataset-neutral reference implementation for leakage-aware evaluation, calibration, reliability, bootstrap intervals, provenance, and auditable evidence manifests.

BQE CORE AI Data Connector

Professional project, Gutschick, Little & Weber, P.A. | [GitHub](#)

- Built a governed read-only ETL and reporting connector that normalizes authorized BQE CORE operational and financial data into an auditable warehouse and traceable context for an internal, human-reviewed AI planning workflow.
- The connector uses OAuth 2.0 Authorization Code with PKCE, permission-aware incremental sync, secure credential storage, retries, deduplication, SQLite validation controls, documented reconciliation requirements, and traceable planning exports.

PraxiCom: Affect-Aware Simulated Patient

Archived 2025 prototype, UT Austin NURSING-AI Challenge | [GitHub](#) | [Demo](#)

- Built student and faculty interfaces, a Socket.IO relay, GuideLLM-informed personas, and Likert-scale evaluation around Hume EVI's low-latency voice-to-voice prototype; identified a modular speech pipeline as the next step for finer prompt control.

Advances in Deep Learning

Graduate coursework, The University of Texas at Austin

- Implemented mixed precision, LoRA, 4-bit quantization, and QLoRA; built patch autoencoding, Binary Spherical Quantization, and autoregressive models for generative image compression.
- Fine-tuned smaller LLMs for mathematical reasoning and built a synthetic-data pipeline that generated nearly one million grounded VQA pairs directly from SuperTuxKart state for object identification and egocentric spatial reasoning without manual annotation.

Dataset Cartography for Robust DeBERTa NLI

Graduate NLP coursework, The University of Texas at Austin | [Report](#)

- Mapped training dynamics for 392,702 MNLI examples across five epochs and implemented category-weighted loss in a custom Hugging Face Trainer; improved HANS adversarial accuracy from 77.49% to 78.59% while retaining 88.47% MNLI accuracy.

PROFESSIONAL EXPERIENCE

Network Manager - Gutschick, Little & Weber, P.A.

Burtonsville, MD | July 2004 - Present

- Own technology operations, network infrastructure, security, automation, vendor strategy, and long-range planning for an engineering firm supporting more than 40 users.
- Use Python and PowerShell to automate workflows and integrate systems; translate business requirements into reliable, secure, and cost-conscious technology solutions.

EDUCATION

The University of Texas at Austin - M.S., Artificial Intelligence, GPA: 4.0 | August 2026

University of Maryland Global Campus - B.S., Data Science, Summa Cum Laude | May 2024