

Lucas Mougeot | AI Systems Architect & Applied LLM Engineer

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Selected Projects

Uplios — LLM-driven intelligent job matching platform

Semantic knowledge graph construction through LLM-powered job parsing for match-score calculations. Deployed a full pipeline of scraping, ingesting, parsing, and ranking using a modular, interpretable system via knowledge graph matching.

Stream Guru – Intelligent Entertainment Platform

Developed a chatbot-based entertainment matching platform to combat user decision paralysis through LLM-parsed search queries. All data scraped from online movie/series database for ready access on PostgreSQL Supabase embedded vector tables (and subsequent Cosine Similarity calculations to rank vector retrievals).

Dennis (Agentic OS) — Native LLM OS for multi-GPU PC orchestration

Operating system designed to power multimodal local inference for AI agents executing CLI. Designed as an agentic laboratory for algorithm development, semantic chaining, and workflow compression.

One-Click Context Toolkit

Auto-generates visual file trees and inline code commentary to support LLM context compression for automated software development. An ongoing project for optimizing context engineering for LLM-driven software development.

RAG-Optimized Chatbot Architectures Through LLM-Driven NLP

Graphical system that reduces hallucination via semantic lookups and cyclical prompt injection strategies for internal validation. Chatbot optimization conducted through dual LLM supervised learning.

ADA Compliance AI

Real-time regulatory auditing through object detection, LiDAR scans, and legal corpus parsing (ADA). Enables automated compliance flagging using parsed government regulation and feature measurements.

Professional Experience

Integration Engineer – EZ Systems (Feb 2025 – Aug 2025)

- Led R&D for client-facing prototypes, including mixed-reality experiences and AI-based compliance auditing, delivering technical documentation and engaging demos for enterprise AI integration.
- Architected modular multi-model systems for long-term learning & stable improvement.
- Authored proposal for Explainable AI federal grant.
- Delivered mixed-reality and AI prototypes that closed presales deals and opened new federal contract discussions.

Graduate Research Assistant – University of North Florida Materials Science Program (2023-2024)

- Developed recipes and built pore-analysis metrology framework based on elliptic geometry across porous ceramics for the development of microgravity-compatible fluid transport systems for crop cultivation.

Education

M.S. Materials Science and Engineering (Thesis Based) — University of North Florida, 2024

B.S. Electrical Engineering & B.A. Interdisciplinary Studies — University of North Florida, 2023

Skills

Languages: Python, JavaScript, TypeScript, C++, SQL, React, PowerShell, Swift, MATLAB

LLM Tools: OpenAI API, Gemini, embeddings, LLM-driven agent optimization, GenAI workflow deployment.

Infra: Supabase, Docker, Render, GitHub Actions (post-push testing), PostgreSQL, Vercel

Frontend & UI/UX Dev: Next.js, React, TailwindCSS

DevTools: VS Code, draw.io, Mermaid, Unity