

Jacob Thomas

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Proficient Technologies

Azure · Azure AI & Search Services · Azure ML Studio · .NET (C#) · Python · PyTorch · JavaScript · SQL · Auth0 · NSwag · Stripe · Logging & Telemetry · React

Experience

Principal Engineer | Applied AI | Mar 2024 – Present

- **Founded and led** Applied AI, an R&D startup focused on rapid AI-powered application development via an open-source core (“The Intelligence Hub”) with a managed-service launch imminent.
- **Built “The Intelligence Hub”** API suite, providing agentic chatbot workflows, RAG retrieval, vision-model support, function execution, and an ASP.NET/React front end template application. ([View On GitHub](#))
- **Developed a companion front-end template** (ASP.NET Core + React) featuring Stripe payments, Auth0 auth, resilient design patterns, and end-to-end telemetry—enabling turnkey, paid AI applications. ([View On GitHub](#))
- **Leveraged the platform** to create:
 - **NLSequel**, a natural-language to SQL conversion tool. ([View Live Site](#))
 - **A Personal Portfolio** to showcase my professional work. ([View Live Site](#))
- As Principal Engineer, designed core infrastructure to streamline agentic chatbot, RAG, and vision-model development for internal and external teams.

AI Engineer | Convergent | May 2023 – Present

- **Owned “Convergent Virtual Assistant”**, a global, multilingual chatbot used by several hundred daily users (2,000+ colleagues) across EMEA, the Americas, and Asia.
- **Led RAG vector pipeline ingesting 50K+ records** weekly from disparate data stores, slashing full-index time from ~48 hrs to ~6 hrs via batching, concurrency, and change-tracking.
- **Stabilized platform over two weeks, driving failure rate from 29% to 0%** with enhanced retry/fallback logic and robust telemetry.
- **Reduced response times from ~50 sec to <6 sec** through prompt caching, streaming, and optimized orchestration.
- **Boosted RAG relevancy from ~45% to >90%** via embedding tuning and hybrid search strategies.
- **Standardizing agentic workflows across the organization**, architecting the “Unified Intelligence API”, an ASP.NET Core service (with NSwag generated clients).
- **Integrated LLMs into enterprise apps**—converting NL prompts to JSON filters and executing functions dynamically.
- **Designed & optimized prompts and pipelines** for chat and vision-model POCs (iDesign/AutoCAD plugin), speeding global design floor-planning by ~20%.

- **Engineered security, logging & telemetry** via Auth0 and Azure Application Insights to meet corporate compliance.
- **2024 ACE (Achieving Convergent Excellence) Award** recipient for leadership in agentic chatbot innovation.

Personal Projects

Binary Prediction Model – A Generalized Script for Training Binary Classification Models
(Python, PyTorch, Azure ML Studio) ([View On GitHub](#))

- Trained a binary classifier on Titanic data with PyTorch, achieving 92% accuracy through advanced feature engineering and hyperparameter tuning.
- Generalized the pipeline to accept any binary-target dataset with dynamic preprocessing and CI/CD-ready workflows.
- Packaged for Azure ML Studio to enable reproducible experiments and automated model updates.

Education

Allegheny College — English BA, Psychology Minor (2020)