

Richard Álvarez

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Research Areas

Human–computer interaction; human-centered AI; computational media; AI-assisted creative tools.

Education

B.A. in Film Aug 2020–May 2024
Kenyon College Gambier, Ohio
Minor in History; Concentration in Integrated Program in Humane Studies (IPHS).

Publications and Posters

- [1] Álvarez, Richard Anthony. *A Retrieval-Augmented Film Recommendation System*. Poster, *IPHS 484: Senior Seminar*, Paper 34, Digital Kenyon, 2024. Digital Kenyon.
- [2] Álvarez, Richard Anthony. *Captivating Video Editing Secrets: Unsupervised Deep Learning and PySceneDetect Analysis of Creative Strategies*. *IPHS 484: Senior Seminar*, Paper 22, Digital Kenyon, 2023. Digital Kenyon.

Professional Experience

AI Solutions Engineer Sep 2025–Present
Layer 7 Systems, Independent Contractor Remote

Built and operated a stateful TypeScript, Bun, and Express MCP service connecting Retell voice agents with Autotask and Microsoft Graph/Teams.

Implemented identity and company resolution, contact-safe ticket access, authorization gates, ticket actions, technician routing, post-call processing, and human handoff.

Developed an authenticated React operations dashboard, maintained a 756-test regression suite, and deployed Docker services through GitHub Actions.

Analyzed 60 workflow recordings from 14 users and identified 176 moments suitable for AI assistance.

Built a Next.js and Neon/PostgreSQL learning platform for 34 trainees across four courses and 16 modules.

Freelance Software and Web Developer Oct 2024–Present
Richard Álvarez, Sole Proprietorship Chicago, Illinois

Design and deploy responsive applications using Next.js, React, Node.js, Tailwind CSS, Stripe, PostgreSQL, authentication, and object storage.

Scope, document, deploy, and maintain client applications, hosting, and content workflows.

IT Assistant Sep 2023–Feb 2024
Kenyon College Library and Information Services Gambier, Ohio

Supported workstation imaging, hardware deployment, classroom technology, and recurring maintenance scheduling.

Selected Software and AI Projects

Vigil	2025–2026
Half-Time Draw Predictor	2026
Chroma	2026
GREasyVocab	2024
Bitset Game of Life	2024–2026
Kubrick-Style Script Generation	2024
Rotten Tomatoes Sentiment Analysis	2024
DV Tools	2025
Business and AI Training Platform	2026
Workflow Capture and Analysis Pipeline	2026
Configurable Voice-Reception Template	2025
Message-Box Auto-Attendant	2025
VibeVoice Evaluation Prototype	2025

Selected Professional Projects

Joaquin Morales Cinematography Portfolio	2024–2026
Machine Television	2024–2025
BDPA HSCC Website Prototype	2025
Personal Portfolio	2024–Present

Professional and Community Service

High School Computer Competition Judge

2024–2025

BDPA

Chicago, Illinois

Reviewed and scored student programming submissions for the 2024 and 2025 national competitions and completed formal judge training.

Professional Certification

CompTIA IT Fundamentals (ITF+)

2024

Technical Capabilities

Agent systems and orchestration: OpenClaw custom agents, skills, memory, and tool integrations; MCP; tool calling; structured outputs; retrieval-augmented generation; context design; multi-agent delegation; human-in-the-loop controls.

AI development environments: Claude Code, Codex, GitHub Copilot and VS Code agent workflows; OpenAI, Anthropic, Gemini, and Retell platforms.

Workflow automation and integration: n8n, REST APIs, webhooks, Autotask, Microsoft Graph, Microsoft Teams, identity and permissions.

Reliability and operations: Docker, GitHub Actions, Linux/VPS operations, CI/CD, automated testing, validation, structured logging, observability, incident response, cost monitoring.

Product and data engineering: TypeScript, Python, Bun, Node.js, Hono, FastAPI, React, Next.js, Electron, PostgreSQL, Neon, SQLite FTS5, Zod.

Systems and computational media: C++20, CMake, FFmpeg, PySceneDetect, NLP and sentiment analysis, interactive media; Rust under active study.