Andrew Grainger, PhD

Medical & Local-First Applied AI Systems

Scientific evidence · persistent memory · evaluated workflows

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Portfolio: voidwright.io · **Open-source projects:** github.com/void-wright

I build AI systems that turn scientific and medical documents and scattered operational records into information people can trace to its source and check before acting. I build lasting, repeatable agentic systems with modern retrieval-augmented generation (RAG), reusable agentic harnesses, and specialized skills and agents that evolve through reviewed corrections and self-healing workflows. My molecular-genetics PhD and collaborative radiology model development ground how I evaluate the evidence these systems return.

INDEPENDENT ENGINEERING · VOIDWRIGHT

Voidloom · memory and reusable agent workflows

RELEASED OPEN-SOURCE CORE · BUILT AND OPERATED

I built and released Voidloom so an AI assistant can recover decisions, evidence and known failures across sessions. Local SQLite, keyword/vector search and session hooks supply context. Alongside the memory core, specialist skills, defined agents and staged review/repair procedures make work repeatable, with explicit handoffs and human release decisions.

Default local embeddings: **Qwen3-Embedding-0.6B (1,024 dimensions)** on GPU; **Nomic v1.5 (768)** on CPU. They make stored context searchable by meaning without sending it to an embedding API.

See and try a fully self-contained system example: Webdev Workbench packages memory, skills and staged checks for building new AI-centered websites. Download the folder, open it in your preferred coding assistant, and ask it to read 00_START_HERE.md and SETUP_GUIDE.md and guide setup.

Voidmill · local scientific-document intelligence

BUILT AND OPERATED · SOURCE-LINKED RETRIEVAL

I built and operated a pipeline that turns scientific papers and product documents into searchable passages with source links. **GLiNER-Biomed** identifies biomedical terms; **SciSpaCy/UMLS** connects them to a shared scientific vocabulary. **Nomic v2 MoE (768-dimensional)** and **ModernBERT (256-dimensional stored vectors)** complement keyword search so related evidence can be found when wording differs. Coverage and regression checks catch missing or misassociated sources before release.

Multistream analytics · find useful patterns in existing medical data

BUSINESS-ANALYTICS DESIGN · PROPOSED MEDICAL APPLICATION

I co-designed an engine to connect scattered records and investigate recurring patterns (shapelets) across text, events and measurements. For medical data, I would link imaging findings, biomarkers, genomic results and clinical records, using known diagnoses and reviewed findings as reference signals. The aim: identify meaningful combinations and changes over time, then test them on held-out records before people rely on them.

My tested local components include **DeBERTa NLI**, which scores text against defined categories, and a simpler word-pattern classifier used as a baseline. I would combine local text measurements with statistical change and cross-stream tests, keeping sensitive processing inside the controlled environment and returning source-linked findings for clinical review and clear dashboards.

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PROFESSIONAL EXPERIENCE

Co-Founder & AI Engineering Lead · Cypher Lab

Aug 2025 – present

- Designed multi-agent workflows linking research, positioning, specialist content, technical review and publication. Built custom orchestration infrastructure, integrated teammates' shared skills with my own components, and documented handoffs and human release decisions.
- Built custom API-backed command-line tools with structured JSON and explicit error contracts. Designed shared Google OAuth 2.0 sign-in and ES256-signed identity tokens with 30-day expiry, validation, allowlisting and admin command gates; kept provider credentials encrypted at rest.
- Built and deployed Astro publishing and resource-hub systems to make reviewed scientific and commercial material available to users.

Senior Manager of Marketing Operations · Precision Cell Systems / ORFLO Technologies

2024 – Oct 2026

- Led positioning, campaigns and sales enablement for Moxi cell-analysis and Singulator sample-preparation products, translating customer questions and scientific evidence into practical materials.
- Deployed AI-assisted website inquiry intake into the live CRM. Model-assisted qualification assesses inquiries; rules route categories, while code controls identity matching, deduplication and writes. Tested creation/readback/deletion and repaired mismatches and missed writes after release.
- Built product-support knowledge bases and a working cloud-based support prototype integrated with Slack.

Field Application Scientist · ORFLO Technologies

2023 – 2024

- Demonstrated and supported Moxi instruments, joined scientific sales calls and resolved technical escalations. Created and narrated training videos and wrote Moxi V IQ/OQ qualification protocols for a customer.

SCIENTIFIC RESEARCH

Post-Doctoral Research Associate, Radiology & Medical Imaging · University of Virginia

2020 – 2023

- Collaboratively developed CT segmentation models. I designed and coordinated data curation, test/validation groups, training, evaluation and subsequent use, with collaborators. Used TIFF-to-NIfTI preparation and TensorFlow/Keras; compared segmentation outputs with manual reference images.

Graduate Researcher, PhD · University of Virginia

2014 – 2019

- Studied cardiometabolic disease through genetic analysis and laboratory validation; coordinated studies and mentored junior researchers. Collaboratively developed and used U-Net-based MRI fat quantification in mouse research.

EDUCATION AND TECHNICAL RANGE

PhD, Biochemistry & Molecular Genetics · University of Virginia, 2019
MS, Biology · UC San Diego, 2014 · BS, Molecular Biology · UC San Diego, 2013
10 peer-reviewed publications · ORCID 0000-0003-4131-2775
Python · SQL / SQLite · Node.js / REST APIs / MCP · hybrid retrieval · graph context · model evaluation · human review · TensorFlow / Keras · Astro / Sanity