

Ashley Scruse, Ph.D.

Applied AI/ML Developer • LLM Agents & Tooling • Full-Stack Development • HPC/GPU Infrastructure

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Applied AI and machine learning developer with a Ph.D. in Bioinformatics. I build end-to-end ML pipelines on GPU and high-performance computing infrastructure, LLM and agent tooling, full-stack web applications, and developer frameworks. I serve as the Deputy Director of a supercomputing facility hosting a system within a \$457M NSF initiative, and I am the founder of an AI-governance startup. I am passionate about building the systems, AI solutions, and automations that allow small teams operate at scale.

EDUCATION

Ph.D., Bioinformatics, University of Georgia

Dissertation: Counting Subnetworks in Genetic Regulatory Networks from Gene Duplication

B.S., Mathematics, Cum Laude, Clark Atlanta University

EXPERIENCE

Deputy Director, Morehouse Supercomputing Facility

2025 – Present

Morehouse College • Atlanta, GA

- ▶ Direct operations of a supercomputing facility selected to host a landmark system within a **\$457M NSF initiative**.
- ▶ Built an **automated user-onboarding pipeline in Google Apps Script** (Sheets-triggered webhook) that provisions new researchers and sends confirmations, eliminating manual one-by-one onboarding.
- ▶ Manage GPU and HPC research access on **NVIDIA Grace Hopper** (GPU) and Grace-Grace (CPU) supercomputing nodes: SLURM scheduling, JupyterHub, and platform orchestration for concurrent research teams.
- ▶ Designed and ran a 12-week **Machine Learning Postbaccalaureate Program**, taking trainees from Python fundamentals to GPU-trained ML capstones; led three instructors and a TA.
- ▶ Created and led the 6-week **Summer Bridge Experience**, a pre-freshman program taking incoming computing majors from Python fundamentals to research capstones and first hands-on HPC.
- ▶ Built and led the **NAIRR Research Accelerator**, a faculty research cohort, and shipped a reusable AI “research starter” toolkit (agent plus skills).
- ▶ Mentored **35 trainees on original ML research in a single summer**; 31 presented at the InSPIRE conference.
- ▶ Co-developed and taught High-Performance Scientific Computing (CSC 450): Linux, SLURM, GPU programming, and Jupyter-on-HPC on NVIDIA Grace Hopper GPU nodes.

Founder & Technical Lead, Quiet Stack

2025 – Present

AI Compliance Startup

- ▶ Founded an AI-integrity startup building **tamper-evident, independently verifiable provenance** for AI-assisted decisions in regulated settings (research reproducibility, FDA/pharma ALCOA+).
- ▶ Architected an open-core SDK pairing an immutable audit ledger with the Model Context Protocol (MCP); Python, DuckDB, Supabase/Firebase, OAuth 2.0 (PKCE).

Faculty Fellow, AUC Data Science Initiative

2024 – Present

Atlanta University Center

- ▶ Designed four consortium data science courses (Machine Learning, Python for Data Science, NLP, Data Visualization), delivered as Canvas-importable packages with scripted build tooling.
- ▶ Led Python and data science workshops for 40+ faculty and trainees across multiple institutions.

Research Fellow, University of Georgia

2017 – 2024

Bioinformatics

- ▶ Developed the theory of **subnetwork motifs**: exact closed-form models for detecting statistically significant patterns in large networks. Published in the *Bulletin of Mathematical Biology* (2025).

SELECTED AI / ML PROJECTS

- ▶ **AI-Enhanced Remote Sensing** (ASCEND Grant). Principal Investigator: CNN detection plus LSTM/Transformer forecasting of Sargassum blooms from satellite imagery (PyTorch on GPU); collaboration with Yale.

- **LLM Agents & MCP Tooling.** Built Model Context Protocol servers and Claude/ADK agents for automated task orchestration, daily briefings, and Slack workflows.

SOFTWARE & DEVELOPER TOOLING

- **Rockhouse ATL (Sauvage Outdoors).** Full-stack client website with a custom scheduling and booking backend that streamlines reservations and reduces manual coordination; Next.js, Supabase, Vercel.
- **Claude Skills Library.** Authored a library of reusable Claude skills that package repeatable workflows (research, content, analysis) into invokable agent tools.
- **AI Research Workflow.** Built a GitHub-and-Claude pipeline for reproducible, AI-assisted research, with staged multi-agent review (build, critique, edit) for quality control.
- **AI-Assisted Grant Writing Toolkit.** Building a persistent-context framework for proposal writing: a structured file that captures a project's goals and specifics so the AI retains full context across sessions and researchers never re-brief it; designed around deliberate context and token management.
- **LLM-Agnostic File-Structure Framework.** Designed a portable, model-agnostic knowledge framework so any LLM can operate reliably over a structured file system.

TECHNICAL SKILLS

Languages: Python, SQL, TypeScript/Node, LaTeX

ML & AI: scikit-learn, TensorFlow/Keras, PyTorch, CNNs, graph neural networks, NLP, computer vision, forecasting

LLM & Agents: Claude API (tool use), Model Context Protocol (MCP) servers, Google Agent Development Kit, prompt engineering

HPC & Cloud: NVIDIA Grace Hopper (GPU) and Grace-Grace (CPU) supercomputing, SLURM, GPU/CUDA, JupyterHub, Docker, Google Cloud Run, Supabase/Firebase

AI Governance: cryptographic provenance, immutable audit logging, ALCOA+ documentation, multi-agent QA

SELECTED PUBLICATIONS & SPEAKING

- Scrusse, A., Arnold, J., & Robinson, R. (2025). Counting subnetworks under gene duplication in genetic regulatory networks. *Bulletin of Mathematical Biology*.
- Al-Omari, A.M., Griffith, J., Scrusse, A., et al. (2022). Ensemble Methods for Identifying RNA Operons and Regulons in the Clock Network of *Neurospora crassa*. *IEEE Access*, 10, 32510–32524.
- “From Access to Impact: Growing AI Capacity at Morehouse College.” ADMI Conference, 2025.