Samuel James Hale

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Education

East Carolina University — M.S. in Computer Science *Jan. 2023 – May 2026*

East Carolina University — B.S. in Software Engineering, Concentration in Data Science *Aug. 2021 – May 2025*

Chancellor's List (Spring 2025), Dean's List (Fall 2022, Fall 2023) · BS/MS Accelerated Program

Technical Skills

Languages:	Python, JavaScript, TypeScript, Java, C#, C/C++, SQL, Go, Bash
Web & Frontend:	React, Angular, Express.js, HTML/CSS, RESTful API Design, GraphQL, HTMX
Backend:	Spring Boot, Django, Flask, Micronaut, Node.js, .NET, Microservices, gRPC
Databases:	PostgreSQL, MySQL, SQL Server, SQLite, Neo4j, Redis; query optimization, indexing, RBAC
Cloud & DevOps:	AWS (Lambda, RDS, IoT Core, Cognito, EC2, S3), Azure, Docker, Kubernetes, Terraform, Linux, CI/CD (GitHub Actions, Jenkins, Azure DevOps)
Testing & Quality:	JUnit, pytest, unit/integration testing, test-driven development (TDD), code review
Security:	OWASP Top 10, JWT/OAuth 2.0 authentication, secure coding practices, input validation
AI & Tooling:	Claude Code, GitHub Copilot, LLM-assisted development, prompt engineering
Version Control:	Git, GitHub, SVN; pull request workflows, branching strategies
Process:	Agile/Scrum, sprint planning, system design, technical documentation

Relevant Experience & Projects

Full-Stack Engineer | *(React, TypeScript, JavaScript, PostgreSQL, Docker, RESTful APIs)*

- Architected and shipped a data-driven React application with a reusable component library, designing the full client–server boundary: API contracts, async data fetching, optimistic updates, and graceful degradation when backend services were unavailable.
- Managed application state across a growing feature surface using React hooks and Context API, keeping the component tree readable and preventing prop-drilling from becoming a maintenance liability as the codebase scaled.
- Established a pull request review process on GitHub that caught logic errors and inconsistent API usage before merge, reducing post-deployment bugs and keeping the main branch in a continuously deployable state.
- Integrated AI-assisted development tools (GitHub Copilot, Claude Code) into the daily workflow to accelerate scaffolding and test generation, maintaining code ownership and quality through deliberate review of all generated output.

Backend API Engineer | *(Java, Spring Boot, PostgreSQL, Docker, JUnit, GitHub Actions, JWT)*

- Designed and implemented a production-ready RESTful API in Java and Spring Boot with layered architecture (controller ⟶ service ⟶ repository), dependency injection, and JWT-based authentication — addressing common OWASP vulnerabilities including broken access control and insecure direct object references.
- Containerized the full application with Docker and wrote a multi-stage Dockerfile that produced lean images, eliminating environment-specific failures between local development, staging, and production.
- Built a GitHub Actions CI pipeline that ran the full JUnit test suite automatically on every pull request, enforced a green-build merge gate that kept the main branch deployable at all times, and made regressions visible within minutes of introduction.
- Optimized critical PostgreSQL queries by analyzing execution plans, adding targeted indexes, and restructuring joins — reducing response times on high-read endpoints and keeping performance predictable as data volume grew.

Data Engineering & Analysis | *(Python, SQL, AWS Lambda, RDS, Pandas)*

- Built data pipelines in Python to ingest, clean, and transform raw datasets into structured formats for analysis and reporting, applying data science methods to real processing workflows involving inconsistent sources and missing values.
- Deployed serverless ETL functions on AWS Lambda with RDS-backed storage, designing the schema and access patterns to support analytical query workloads without full table scans.
- Produced visualizations and summary reports from processed data that communicated findings to non-technical stakeholders, translating query results into actionable insight rather than raw numbers.