

Michael McGarrah

Engineering Leader | Enterprise Architecture · AI/ML · Cloud Platforms

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Profile

Technology leader with 30+ years bridging enterprise architecture, AI/ML, and cloud platforms. Career spans engineering leadership, enterprise architecture (statewide standards for NC state government), and hands-on platform engineering (AWS, EKS, production ML models). Security depth includes IRS SafeGuard audits, SOC 1/SOC 2 compliance across eight simultaneous audits, and Congressional subcommittee work (ETAAC). Currently completing an Executive MBA at UNC Wilmington.

Education



Executive MBA — Corporate Entrepreneurship

University of North Carolina Wilmington

2025 – present
GPA: 4.0



MS Computer Science — Interactive Intelligence (AI/ML)

Georgia Institute of Technology

2014 – 2019
GPA: 3.63



BS Computer Science — Honors

North Carolina State University

1990 – 2011
GPA: 3.42

Experience



Lead Principal Engineer (Cloud & ML Focus)

Envestnet, Inc., Emerald Isle NC (Remote)

Oct 2021 – Present

Cloud platform architecture across 20+ AWS accounts. Founded EKS Working Group. Led SOC 1/SOC 2 compliance for 8 simultaneous audits. Built enterprise observability framework.



Principal Data & Analytics Platform Engineer

Blue Cross and Blue Shield of NC, Raleigh-Durham NC (Remote)

Apr 2019 – Oct 2021

Architected enterprise data science platform (EKS, EMR, SageMaker). Production deep learning models processing claims data for all NC members. Director-equivalent authority.



Data Engineer

United States Postal Service, Raleigh NC

Nov 2017 – Apr 2019

Administered 25-node SAS Viya cluster (26TB RAM) connected to 50+ node Hadoop data lake. NIST 800-53 high security. Built data acquisition modules for Chief Data Scientist's team.



Cloud Architect

American Kennel Club, Raleigh-Durham NC

Jul 2016 – Sep 2017

AWS cloud evangelist. Migrated www.akc.org in 6 weeks with zero customer impact. Reduced hosting costs from \$30K/mo to under \$5K. End-to-end CI/CD.



Enterprise Architect for Strategic Initiatives

NC Department of Information Technology, Raleigh NC

May 2015 – Jul 2016

Led enterprise-wide technology strategy for NC state government. Authored RFI for statewide data center network modernization. Co-authored security standards RFP.



Senior Systems Programmer & Administrator (AI)

Measurement Incorporated, Durham NC

Apr 2013 – Jul 2015

Built scalable AWS compute platform for ML scoring workloads (thousands of spot instances). Owned all costs/FinOps. Custom MIT Star Cluster for distributed AI.



Systems Administrator

SAS Institute, Inc., Cary NC

Aug 2011 – Mar 2013

FDA CFR Part 11 validated systems for pharmaceutical clinical trials. Multi-tier SAS architectures for 80+ customers. All 6 SAS certifications in 6 consecutive months.



Application and Network Security Specialist

NC Department of Revenue, Raleigh NC

Mar 2007 – Aug 2011

Passed IRS SafeGuard audit (1,300-page report, no noteworthy findings). Congressional subcommittee (ETAAC). NIST 800-53, PCI-DSS, FISMA frameworks.



Congressional Subcommittee Member

ETAAC Security Subcommittee, Washington DC

Mar 2009 – Mar 2011

NIST 800-53 controls adapted to IRS Publication 1075 for third-party tax preparer security standards. Congressional report applied these as baseline.

**IT Engineer (IT Director)**

BD Biosciences, Durham NC

Sole IT leader for manufacturing plant. All IT services, budgets, one direct report. Apriso MES, Oracle, SAP integration, medical device compliance.

Mar 2006 – Mar 2007

**Systems Programmer**

NC Community College System, Raleigh NC — Solaris/AIX for all 58 NC community colleges

Jan 2005 – Mar 2006

**Systems Engineer**

Hosted Solutions (Springboard Hosting), Raleigh NC — Senior off-shift supervisor, 3 data centers

May 2004 – Jan 2005

**UNIX Engineer**

NetIQ/Ganymede Software, Morrisville NC — API-driven lab automation predating cloud computing

Jun 2002 – May 2004

**Development Manager / Operations Manager — NC LIVE**

NC State University — Statewide digital library serving all NC public libraries and universities

Jan 1999 – Nov 2000

**Application Analyst Programmer / Systems Programmer**

NC State University, Raleigh NC — Financial systems, Sybase, cross-platform development

Jun 1998 – Jun 2002

**Benchmark Developer (System Programmer)**

Ziff-Davis Publishing, Raleigh NC — Winstone, WinBench, PC Bench, JMark (PC Magazine)

Jun 1994 – Jun 1998

**Senior Operations Technician / NOC**

Interpath Communications, Raleigh NC — Network operations, two part-time stints

1998 – 2001

**Technical Services Manager**

Pioneer Software / Q+E Software, Raleigh NC — OEM manager for 130+ customers (IBM, Microsoft, Borland)

Jul 1992 – Jun 1994

Skills**Cloud & Infrastructure:** AWS (EKS, EMR, SageMaker, Lambda, CloudFormation), Terraform, Kubernetes, Docker, Karpenter, KEDA, Calico, Istio, ArgoCD**AI/ML & Data:** Python, PyTorch, TensorFlow, Pandas, Spark, Airflow, SageMaker, Bedrock, Jupyter, NLP, Computer Vision**Security & Compliance:** SOC 1/2, NIST 800-53, IRS SafeGuard, PCI-DSS, HIPAA, FedRAMP, OWASP, ISO 27001**Languages:** Python, Java, C/C++, SQL, TypeScript, Shell, Terraform/HCL, Ruby, Go, Perl, Scala**Databases:** PostgreSQL, MySQL, SQL Server, Oracle, DynamoDB, Redis, MongoDB, Snowflake, Aurora Serverless**Observability & DevOps:** New Relic, GitLab CI/CD, GitHub Actions, Jenkins, Helm, ELK, Prometheus**Certifications****ISC2 Certified in Cybersecurity (CC)**

2024

AWS Certified SysOps Administrator

2017

AWS Certified Solutions Architect

2017

ITIL Foundation v2011

2016

6x SAS Certified

2012–2013

Red Hat Certified Engineer (RHCE)

2001

Publication**Forced alignment for Nordic languages: Rapidly constructing a high-quality prototype.** Young, N.J. & McGarrah, M. *Nordic Journal of Linguistics*, 2021. [GitHub]

This ultra-brief omits: Projects, experience subsection narratives, part-time/consulting roles, and student positions. Skills, Certifications, and Publication shown here in abbreviated form.

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