Michael Chad Tollison

Software Engineer | Identity, Backend & APIs
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SUMMARY

Software engineer who builds and owns production identity, privacy, and backend services in C#/.NET, Python, and AWS. Built SAML/JWT SSO used by 300+ customer organizations, automated SCIM provisioning with Entra ID, and replaced a manual PII-removal process with a service that handles 50+ requests a day. Backed by 10 years of SQL Server, ETL, and data work across healthcare, government, and education.

EXPERIENCE

Babel Street **April 2020 – Present**
Software Engineer

Software & Identity Engineering

- **Built a SAML 2.0/JWT SSO framework** used by 300+ customer organizations, including certificate validation, identity mapping, and identity-provider integrations.
- **Automated user provisioning and deprovisioning** with Microsoft Entra ID and SCIM, eliminating hours of manual developer work per onboarding request.
- **Built a C# privacy microservice** that automates 50+ PII removal requests daily, replacing about 2 hours of manual work per request, including confirmation that no requester PII remains.
- **Automated a daily privacy-compliance sync** between Salesforce and an internal PostgreSQL (AlloyDB) privacy database, eliminating ~12 hours/week of manual reconciliation by engineering and legal; built a containerized Python service on AWS ECS with dependency injection and idempotent batch writes (zero redundant API writes), and authored CloudFormation IaC for EventBridge scheduling and CloudWatch metrics, alarms, and dashboards, deployed via GitHub Actions.
- **Own C#/.NET microservices** for users, organizations, groups, permissions, quotas, and password workflows, with NUnit test suites and tuned SQL Server stored procedures, indexes, and Dapper queries.
- **Cut service latency about 50%** by replacing blocking ADO.NET calls with async Dapper and resolving SQL Server parameter sniffing.
- **Hardened services for concurrency and resilience:** built bounded-parallel document retrieval with thread-safe aggregation and cancellation to prevent downstream connection exhaustion, and stopped cascading retry storms on HTTP 408/504 timeouts with configurable gateway retry controls.
- **Built a containerized .NET 8 service on AWS API Gateway** that tracks customer API usage for billing, contract-limit monitoring, and customer-support visibility.
- **Developed Next.js/React and TypeScript features** (Redux Toolkit, RTK Query) for the search application, including session tracking and timezone-aware views; fixed customer-escalated UI hangs and PDF export rendering issues.
- **Built a deployment-drift detection system** in Node.js and GitHub Actions that audits deployed commits daily across five environments and alerts on stale or missed releases.
- **Remediated CVEs and CodeQL findings** across .NET, Node.js/TypeScript, and Python, including SSRF, ReDoS, URL sanitization, insecure randomness, and TLS handling.
- **Lead production triage and customer escalations** for API errors, timeouts, and export failures using Sentry and CloudWatch. Mentored four interns, two hired full-time.
- **Built a PII detection and redaction service** (fine-tuned DistilBERT, FastAPI) reaching 0.98 F1 on held-out data. Diagnosed shortcut learning in the first model through token-level error analysis and fixed it with redesigned training data, improving F1 from 0.55 to 0.97.

Data & AI

- **Architected a 440+ GB centralized reporting database** that consolidates product and API usage for Power BI, QuickSight, SSRS, and internal services. Also work with Elasticsearch datasets over 5 TB.
- **Built AI agents on GCP Vertex AI:** a multi-model Gemini and Claude agent for executive report summaries and Q&A, and an autonomous developer agent that takes Jira tickets, explores multi-repo codebases, writes and tests code, and opens GitHub pull requests.

nSPARC, Mississippi State University **July 2018 – April 2020**
Data Analyst

- Engineered ETL workflows in SQL Server, SSIS, Python, and C# for Mississippi's Statewide Longitudinal Data System (LifeTracks), integrating K–12, higher ed, workforce, and unemployment data.

- De-identified and validated sensitive government records across 2+ TB of data, applying privacy and data-quality controls before loading.

Blue Cross Blue Shield of Mississippi **June 2016 – June 2018**
Data / Information Analyst

- Built and supported production ETL (IBM DataStage) across Oracle, DB2, and SQL Server for claims, member, provider, and billing data in a HIPAA-regulated environment.
- Designed data models in CA Erwin and wrote SQL and stored procedures for downstream applications.

PROJECTS

- **LocalLift** – Full-stack multi-tenant SaaS application: Next.js/TypeScript frontend, Django REST backend, PostgreSQL, Celery, Redis, and Stripe billing.

TECHNICAL SKILLS

Languages & Frameworks: C#, .NET 8, ASP.NET, Python, FastAPI, Django, TypeScript, Node.js, React, Next.js, Redux Toolkit, NUnit
Identity & Security: SAML 2.0, JWT, SCIM, Entra ID, SSO, RBAC, CodeQL, CVE remediation, PII/PHI protection
Cloud & DevOps: AWS (ECS/Fargate, API Gateway, S3, ECR, CloudWatch, EventBridge, Secrets Manager, CloudFormation), Docker, GitHub Actions, CI/CD
Data: SQL Server, PostgreSQL, MySQL, Oracle, Elasticsearch, Redis, Dapper, SSIS, ETL, query optimization
Observability & AI: Sentry, Splunk, Vertex AI, Gemini, Claude, LLM agents

EDUCATION & CERTIFICATION

B.B.A., Business Information Systems, Mississippi State University, May 2016
A.A.S., East Mississippi Community College, May 2013
SAFe for Teams Certified
Snowflake Hands-On Essentials: Data Warehouse | Snowflake | 2026

- Completed hands-on training in Snowflake data warehousing, including SQL, database objects, JSON data ingestion, staging, and data loading.
- Applied practical Snowflake skills using COPY INTO, file formats, and structured and semi-structured data.