MICHAEL SHAWN LOCKWOOD

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PROFESSIONAL RÉPERTOIRE

My foundation in SQL Server and T-SQL development spans two decades. I specialize in performance, scalability, and automation engineering across the full data lifecycle. I design and build complete data pipelines—from raw sources such as Parquet, CSV, and PSV—through database design, development, and optimization now in Databricks, SQL Server, and PostgreSQL, all the way to analytics and visualization in Power BI and D3.js. My work spans on-prem. and cloud-aligned environments, including Azure and Databricks, where I also experiment locally with Azurite and MinIO to emulate real-world cloud architectures for Delta Lake and object-storage integration. Though I can build APIs and UX layers, my strongest impact is in the data tier, where design and performance converge.

I'm a highly motivated and naturally curious professional who takes pride in understanding how every layer of data architecture fits together. Whether examining execution plans, tightening indexes, or refining data flows, I approach every challenge with a performance-first, automation-second mindset. I value precision, reliability, and transparency—traits that have defined my success across healthcare, finance, and hospitality systems for more than two decades.

I began with Microsoft Access while in college nearly 30 years ago. Naturally, I migrated to SQL Server using Microsoft's Data Transformation Services (DTS) and earned my MCDBA certification in 2006. SQL Server, T-SQL, and SSIS form the foundation of my career. I also hold a Bachelor's degree in Business Administration from DeVry University.

For additional background, project and code examples, visit my GitHub Pages and LinkedIn.

TECHNICAL SKILLSET

Core Database

- **Transact-SQL (T-SQL)** – advanced development, performance optimization, and automation
- **SQL Server Integration Services (SSIS)** – ETL, data migration, and process automation
- **SQL Server Reporting Services (SSRS)** – reporting, analytics, and dashboard delivery
- **SQL Server Data Tools (SSDT)** in Visual Studio; daily development in **VS Code**
- **Databricks SQL**

High Availability & Disaster Recovery (HADR)

- Installed, configured, and managed **Always On Availability Groups**, **Windows Server Failover Clustering (WSFC)**, and **Log Shipping** in production

Performance & Security

- Many thousands of hours in **query tuning, indexing strategies, and partitioning**
- Experience with **Extended Events, Resource Governor, SQL Trace, and SQL Audit** for performance and compliance

Automation & Orchestration

- Designed **automated solutions** using **T-SQL** and **SSIS**; experience with **PowerShell** and **Python** scripting
- **Labs: Building data pipelines** and workflow orchestration using **Airflow**; analytics with **Databricks**; visualization in **Power BI**

Platforms

- **SQL Server** (7.0a–2019, 2022 lab), **PostgreSQL**, **Azure SQL**, **SQL Server on Azure VMs**, **GitHub**, Hyper-V, Oracle VirtualBox, **Docker**/Dev Containers, **Linux** (Debian/openSuSE)

Application & API Collaboration

- Partnered with development teams on **C#,** and **ASP.NET Core** solutions

- Hands-on with **API design and testing** (REST, OData, Postman, Identity Server) to understand integration between application and data tiers

PROFESSIONAL EXPERIENCE

INDEPENDENT PROJECT WORK | DATA ENGINEERING & DATABASE DEVELOPMENT
2021 – Present

Once Walmart Health's acquisition of MeMD finalized in June 2021, I took the opportunity to further my education, informally, and expand my knowledge and experience in modern and emerging data engineering technologies. I've self-directed my projects and development work. One outcome is a multi-billion row public data engineering pipeline focused on large-scale data ingestion, validation, and analytics across SQL Server, PostgreSQL, Azure, and Databricks, separately for a number of reasons. I use Python and PowerShell for converting and merging Parquet files into PSV files (and back), then bulk import into relational tables, and write Delta Lake tables to the blob storage that backs Databricks SQL Warehouse — extensions make Parquet file conversion largely unnecessary because of Parquet format adoption, but it's good to know. For local development I reduce Parquet file size using Bernoulli probabilistic sampling. I use GitHub and VS Code for development and version control. I use Airflow and Python to orchestrate repeatable pipelines, while Databricks supports heavy lifting, and DBX is sleek. I document and publish my work and progress in my GitHub Pages.

I've worked in slow, moderate, and fast-paced environments for many years, mostly in healthcare and transaction-heavy industries as a Senior DBA. I'm a firm believer in mastering core platforms and technologies rather than a generalist—still, I've taken time to learn and experiment with a variety of tech: **PostgreSQL**, **Python**, **PowerShell**, **JavaScript**, **Jupyter**, **Airflow**, **Databricks SQL, Notebook, and Dashboards**, **Power BI**, **D3.js**, **Hyper-V**, **VirtualBox**, **Docker**, **ASP.NET Core**, **Identity Server**, **Node.js**, **Angular**, **CSS/Sass**, and even **MongoDB**. ***This is more than a laundry list of tech***. These explorations help me stay adaptable and give me perspective, many of which I use in my recurring development and deployment cycles as part of my **professional roadmap**.

SENIOR SQL SERVER DBA and DEVELOPER
MeMD — January 2018 – June 2021 {Acquired by Walmart Health June 2021)

Key Accomplishments:
Engineered a complex, automated file-ingestion pipeline to retrieve, decrypt, parse, transform, and process member data files from enterprise clients—reducing processing time from two business days to under ninety minutes, minimizing manual intervention, and eliminating the instability of long-running, memory-intensive workflows.

Technologies: SQL Server (on AWS), SQL Server Integration Services (SSIS), T-SQL, Visual Studio Code, and Python.

Key Responsibilities:
Developed and maintained stored procedures, functions, and other data-access components in SQL Server (hosted on AWS).

Monitored SQL Server for performance degradation and tuned data-access logic and indexes accordingly.

Collaborated with the DevOps team to align data processes and deploy database changes in support of the CI/CD pipeline.

SQL DATABASE DEVELOPER
ProKarma (Contractor for InEight) — October 2017 – February 2018

Key Accomplishments:
Designed and built an end-to-end **proof of concept (POC)** integrating **SQL Server Views**, supporting indexes, multiple **OData Service** endpoints, and an **SSIS** package to reassemble and process data from **OData URIs**.

Isolated the root cause of performance degradation in an **Azure SQL Shard Map Manager** database, improving response times and system stability.

Developed a POC **ASP.NET MVC** application demonstrating dynamic **SSRS** connectivity by injecting report parameters into a **ReportViewer** control.

Worked with DACPAC files for database deployment and versioning.

Key Responsibilities:
Worked with both **Azure SQL Database (PaaS)** and **SQL Server on Azure VMs (IaaS),** optimizing query performance and improving stability across environments.

Continuously improved system performance by correcting poor **schema design**, optimizing **indexes**, and rewriting **stored procedures** and **functions**

SQL DATABASE DEVELOPER
Cornerstone Advisors, Inc. — December 2016 – September 2017

Key Accomplishments:
Delivered extensive **T-SQL development** to produce the company's *Cornerstone Benchmarks* report — a flagship product for the banking industry.

Designed and developed over **40 SSRS business performance reports** supporting various **business units** and **lines of service**.

Engineered high-volume data exchange processes involving **JSON files** and **SQL Server**, facilitating seamless data integration between internal systems and external clients.

Gained deep hands-on experience with **JSON serialization, parsing, and bulk import/export techniques**, optimizing throughput and reliability for large data sets.

Leveraged **stored procedures**, **staging tables,** and custom ETL logic to automate and streamline the processing pipeline.

Created a custom database to serve as a **financial data warehouse**, integrating data from **QuickBooks**, **FDIC**, and **NCUA flat file sources**.

Developed a **web-based administration and analytics tool** using **ASP.NET Core MVC** and **D3.js** for interactive **data visualization** and **banking metrics**.

Key Responsibilities:
Enabled data-driven decision-making by designing systems that provided **secure, accessible business intelligence** across the organization.

Replaced error-prone Excel-based workflows with scalable, **database-centric solutions**, significantly improving reliability and operational efficiency.

SENIOR DATABASE ADMINISTRATOR
FlipSwitch, Inc. (Primavera Online High School) — June 2015 – October 2016

Key Accomplishments:
Eliminated database bottlenecks through extensive **performance tuning** — including **query optimization, indexing**, and **partitioning** — significantly improving throughput and responsiveness.

Implemented and managed **Windows Server Failover Clustering (WSFC)** and **AlwaysOn Availability Groups** to ensure high availability and fault tolerance.

Authored concise, streamlined documentation for **WSFC** implementations — removing unnecessary detail to make the process clear, accessible, and easy to follow.

Designed and implemented real-time monitoring for **SQL Server query queue length**, enabling rapid detection of performance anomalies.
Built a custom **schema auditing** solution, which enabled identification of unauthorized or accidental schema changes.

Resolved a critical production outage caused by a dropped index: detected the issue quickly, rebuilt the index within minutes, and traced the root cause — leading to improved **change control procedures** and preventing future downtime.

Replaced nightly **ETL** jobs with real-time **transactional replication**, offloading reporting overhead from the primary **OLTP** system and reducing system load.

Key Responsibilities:
Designed, tuned, and administered multiple **SQL Server 2012** instances supporting a **high-volume OLTP** environment for education software platforms.

Mentored developers on database design and writing efficient **T-SQL** queries, promoting **best practices** across the team.

Continuously improved system performance by identifying **hotspots**, correcting **schema** flaws, adding and **tuning indexes**, and rewriting resource-intensive **stored procedures** and **functions**.

SENIOR DATABASE DEVELOPER
Charles Schwab (Contractor via Randstad) — December 2014 – June 2015

Key Accomplishments:
Designed, developed, and delivered an efficient, **automated auditing solution** for **database permissions** across the enterprise — leveraging **SSIS**, **T-SQL**, and **PowerShell** to streamline **compliance** across a vast **SQL Server** landscape.

The environment comprised **1,000+ SQL Server instances**, **15,000 user databases** — requiring continuous analysis and prioritization of high-impact tasks.

Earned and maintained a high level of **trust** while gaining privileged access to **mission-critical databases** spanning numerous **business units**, each representing the operational core of a distinct **line of business.**

Provided guidance on database security and data management best practices, including encryption with **TDE**, key management through **EKM**, regular key rotation, and enforcing least-privilege access controls to protect sensitive data and maintain compliance.

The contract concluded successfully after six months, with transition to a full-time role elsewhere.

DATA ARCHITECT
Best IT Engineering (Rebuilders Automotive Supply) — January 2014 – October 2014

Key Accomplishments:
Designed and built a **modular, fault-tolerant ETL framework** using **SSIS** to process very large and **numerous flat file sources** — a common and critical challenge in the organization's data flow.

The new framework supported **error handling**, restarts, and **detection** of corrupt files, significantly reducing downtime and the need for manual intervention.

Very large files were intelligently split into **1,000-row segments** to enable controlled, **parallel processing**, improving throughput and resilience. *Today I'd use Python for much of this.*

DIRECTOR, INFORMATION INFRASTRUCTURE
OnePoint Patient Care — September 2008 – January 2014

Key Accomplishments:
Conceived, designed, and developed the entire data infrastructure — including the relational database, data warehouse, security model, and ETL architecture — powering OnePointRx, the company's flagship ASP.NET web application and reporting solution built on SQL Server 2012.

Integrated HL7 clinical data from external sources into SQL Server, ensuring timely and accurate access to patient information across internal pharmacy and care systems.

Developed ETL pipelines to normalize HL7 message formats and merge structured data into operational workflows.

Engineered a creative solution to a complex multi-tenant, multi-page reporting challenge using SQL Server Reporting Services (SSRS). Built a report that rendered individual pages for each hospice patient, scoped securely by tenant.

Solved the problem by using a parent report containing only a list of patient IDs (1 row, 2 columns) as input to the subreport, where the subreport was embedded in column 2 — with dynamic parameters and strategic page breaks to control output. The solution arrived spontaneously — the design became clear overnight, reflecting some kind of deep internalization and problem-solving while sleeping.

Served as technical lead and project manager for all software development initiatives, collaborating closely with the software architect and developers to deliver a platform-agnostic, web-based application used across desktop and mobile platforms (iOS, Android, BlackBerry).

Administered SQL Server 2012 to support multi-tenant, multi-state operations and expanded services, including clinical and pharmacy benefits management.

Designed and implemented a wide range of SSIS-based data integration solutions between hospice clients and third-party service providers.

Led the upgrade and migration of SQL Server instances from 2008 R2 to 2012, ensuring high availability and minimal disruption.

Key Responsibilities:
Led and managed a high-performing development team — including a senior software architect — providing technical direction, ensuring project alignment with business goals, and overseeing all in-house software initiatives from inception to delivery.

Administered SQL Server (2008 R2 and 2012), including SSIS and SSRS, supporting OnePointRx, third-party pharmacy systems, and internally developed mobile applications.

Integrated HL7 clinical data from external sources into SQL Server, ensuring timely and accurate access to patient information across internal pharmacy and care systems.

Developed and maintained ETL pipelines to normalize HL7 message formats and merge structured data into operational workflows.

Delivered enterprise database solutions to support both Data Services and Business Intelligence initiatives.

Designed logical and physical relational and multidimensional database models to support evolving business needs.

Performed end-to-end data analysis, integration development, performance tuning, and production support.

Conducted code reviews, oversaw QA, and developed automated regression testing and reporting systems.

Tuned stored procedures, indexes, and user-defined functions (UDFs) to ensure performance of OLTP and reporting workloads.

SENIOR DATABASE CONSULTANT
Digital Intelligence Systems (Contracted to Grand Canyon University) — August 2013

Project Scope:
Brought in on the strength of professional reputation to urgently **resolve critical system unresponsiveness** affecting production applications on **SQL Server 2012**, and to develop a solution for **forecasting database growth.**

Solutions Delivered:
Identified the **root cause** within one hour and resolved the issue within two, restoring full system functionality — using **SQL Server Dynamic Management Views (DMVs)** to analyze **active session behavior** and uncover the underlying issue.

Conducted a broader **performance assessment**, delivered optimized **T-SQL**, and implemented **automated monitoring** to capture **blocking chains** and generate **alerts** — preventing recurrence.

Designed and delivered an **automated data growth tracking solution**, capturing periodic measurements across key **SQL Server instances**.

Built tools for **forecasting** and **trend analysis**, giving *Grand Canyon University* greater visibility into future **storage** and **capacity planning.**

This additional work was assigned after resolving the primary issue on the first day — despite the project being originally scoped for two weeks.

SENIOR DATABASE ADMINISTRATOR
Choice Hotels International — July 2007 – September 2008

Key Accomplishments:
Conceived, designed, and led development of a custom utility called **AIMS (Automated Index Management Solution)** using **T-SQL** and **SQL Server Integration Services (SSIS)** — created in collaboration with a fellow DBA under my direction as the **Senior DBA** on a 7-person **OLTP** team. The utility automatically **rebuilt or reorganized fragmented indexes** across all **SQL Server 2005** instances from a central location.

Included features such as **scheduling, alerts, automatic index discovery**, and **default configurations** for newly added servers and databases — making it both **scalable** and **low-maintenance**.

Leveraged configurable thresholds stored in **control tables** to monitor **index fragmentation** levels and apply **index reorganization** during periods of lower activity — **minimizing** the need for **full index rebuilds**. Combined with sound index design, this helped maintain **optimal OLTP performance** throughout the day.

Delivered supporting **SSRS** reports for navigating results and analyzing maintenance history.

Documented the solution thoroughly and **presented it to leadership**, where it was **well received**.

The utility performed **scheduled scans** for **index fragmentation** and applied **index reorganization** when fragmentation was moderate — deferring full rebuilds to only when necessary. This approach **optimized resource usage** and preserved **OLTP performance** throughout the day. After implementation, **AIMS fully automated index maintenance** across hundreds of indexes — **eliminating late-night manual DBA rotations**, **reducing operational overhead**, and consistently **maintaining high system performance**.

Key Responsibilities:
Administered the **SQL Server 2005** environment behind choiceADVANTAGE®, *Choice Hotels'* online reservation and hotel operations management system.

Managed features such as **database mirroring**, **replication**, **backups**, and **log shipping** (via **Red Gate SQL Backup**).

Improved database and application performance through **stored procedure tuning, index optimization**, and **architecture refinements**.

Promoted and enforced **best practices** in **database development** and **operations**, while developing **database-centric solutions** to support **enterprise applications**.

DATABASE ARCHITECT, DEVELOPER, AND ADMINISTRATOR
MotorWeb, Inc. — July 2006 – July 2007

Key Accomplishments:
Redesigned and migrated the company's **product database**, which served as the backend for its **e-commerce website**, transforming it from a **de-normalized**, **constraint-free** model into a properly **indexed**, **normalized**, and **transactionally sound** design.

Implemented **SQL Server 2005 Reporting Services (SSRS)** and **transactional replication** to enable local reporting capabilities.

Developed a **T-SQL** and **Visual C#.NET**-based **XML** solution to generate and manage **product feed files** for Internet shopping directories, automating the upload of product data in structured **XML** format.

Key Responsibilities:
Designed, implemented, and maintained a robust **SQL Server 2005** environment to support high-volume **e-commerce operations**.

Improved system performance and user experience by optimizing **stored procedures**, refining **indexing strategies**, and restructuring **query logic** where needed.

DATABASE DEVELOPER
Ryland Homes — January 2006 – June 2006

Key Accomplishments:
Designed, developed, and implemented the new *Ryland Homes* database using **SQL Server 2005** to support core business operations.

Built and deployed **SSIS** packages to perform **ETL** operations, both ingesting data from external sources and exporting data from internal systems to third-party targets.

Leveraged **SQL Server FOR XML** extensions**, Common Table Expressions (CTEs),** and nested **FOR XML** queries to produce complex hierarchical **XML** structures for data sharing with partner websites.

Designed, tested, and implemented maintenance plans for both **SQL Server 2005** and **SQL Server 2000** environments, ensuring reliable performance and availability.

DATABASE DEVELOPER
University of Phoenix, Online (Apollo Group, Inc.) – September 2004 – January 2006

Key Accomplishments and Responsibilities:
Designed, developed, tested, implemented, and maintained multiple **SQL Server 2000 OLTP** databases supporting a variety of web-based applications.

Created complex **stored procedures, user-defined functions (UDFs), triggers,** and **views** using **Transact-SQL (T-SQL).**

Performed **schema redesigns**, including scripting data migrations and building full rollback plans to preserve data integrity during deployment.

Enhanced system performance through targeted **stored procedure** and **index** tuning, and architectural adjustments to critical **database objects**.

Diagnosed and corrected flaws in legacy **T-SQL logic** and **data workflows**, reducing production issues and boosting application stability.

ETL DEVELOPER
Mellon Financial Corporation – October 2003 – September 2004

Key Accomplishments:
Automated 28 manual processes using **SQL Server Data Transformation Services (DTS)** by developing a modular, reusable **package model**, enabling rapid development of each subsequent process.

Designed and developed a relational database to store, secure, and manage client information, as well as metadata for **SQL Server Agent Jobs** and **DTS Packages** used in client data workflows.

Key Responsibilities:
Developed **stored procedures**, **user-defined functions (UDFs)**, and **DTS Packages** to process, manage, and distribute client data using **SQL Server 2000**.

Created a standardized **DTS architecture** using shared components, significantly reducing development time and increasing maintainability across **ETL** processes.

Evaluated, recommended, and implemented improvements to existing database processes, ensuring **data integrity**, **scalability**, and **performance**.

Managed all **DTS workflows**, leveraging **T-SQL**, **ActiveX scripting**, and scheduled **SQL Server Agent Jobs** to support automation.
Diagnosed and resolved **data entry** and **retrieval** issues tied to **business logic**, user behavior, and **web-based commercial application** processes.

DATABASE DEVELOPER and ADMINISTRATOR
Saturn Marketing Technologies, Inc. (Telecommunications Agency) – April 2000 – October 2003

Key Accomplishments:
Normalized and migrated seven databases from **Microsoft Access 2000** to **SQL Server 7.0a** to support growing data volume — significantly improving **scalability**, **performance**, and **data integrity**.

Implemented **SQL Server 7.0a** to support secure, **Internet-based client access**, replacing legacy systems and enabling **real-time reporting for the first time** in the organization's history.

Designed and developed a .**NET-based** web application using **ASP.NET Web Matrix**, providing clients with **browser-based access** to current data and reports — marking my **introduction to web development**.

Streamlined **data processing**, **management**, and **reporting** by **automating workflows** with **DTS Packages**; reduced runtimes from hours (or days) to minutes using **stored procedures** and **SQL Server Agent Jobs**.

Migrated servers and workstations from **Windows NT 4.0** to **Windows 2000** and **Windows XP**, improving security, reliability, and system support.

Installed and configured **SuSE Linux** and **DNS server** software on **custom-built servers** to manage dynamic domain name changes efficiently.

Replaced **Microsoft Exchange Server 5.0** with **qmail** to resolve open relay vulnerabilities, reduce costs, and eliminate service interruptions.

Personally sourced components online and built the company's two **production servers** starting with **bare** metal **server cases**, including acquiring custom steel plates for mounting, and installed and racked them in the company's server room.

Key Responsibilities:
Evaluated, designed, developed, tested, and maintained databases using **SQL Server 7.0a**, including development of **DTS Packages**, **stored procedures**, **views**, and **triggers**; ensured **data integrity**, managed **replication**, and optimized **data storage**.

Administered and supported the company's **network infrastructure**, including **domain controllers**, **workstations**, **email server**, **DNS server**, and **antivirus** software across **Windows NT/2000/XP** and **SuSE Linux** platforms.

Managed and maintained **network hardware**, including **Cisco** and **Netopia routers**.

Delivered **technical support** at all levels, from infrastructure troubleshooting to end-user **application support**.

DATABASE DEVELOPER and SYSTEMS ADMINISTRATOR
Home Improvement Mortgage, Inc. – November 1998 – February 2000

Key Responsibilities:
Designed, developed, and maintained a **marketing database** using **Microsoft Access 97**, performing complex **data manipulation** and **cleansing** to prepare records for integration with a **computer telephony system**.

Administered the **Local Area Network (LAN)**, including hardware/software installations, **Windows NT Server** maintenance, and end-user technical support.

DATABASE DEVELOPER
Arizona Public Service Co. – September 1997 – October 1998

Key Accomplishments and Responsibilities:
Designed and developed a **Windows application** for *CyberTrails* to track **WAN infrastructure** using **Microsoft Access** and **Visual Basic**.

Created executive-level **monthly trend reports** using **Access** and **Excel**, delivering actionable insights to leadership.

Developed data access logic components in **Visual Basic** for the *APS Energy Services* **browser-based intranet application**, supporting customer order and inquiry management.

Used **Microsoft Project** and **Office** tools to manage project schedules and support *APS Business Ventures Group* in tracking and coordinating key business activities.

Created and personally delivered monthly **revenue trend reports**—featuring **Microsoft Access reports with charts** printed in color on a wax-transfer printer, then manually hole-punched and bound using plastic comb bindings—ensuring the CEO received clear, professionally presented financial insights.

EDUCATION

Bachelor of Science in Business Administration
DeVry University, Phoenix, AZ — June 2003

Graduated Magna Cum Laude, cumulative GPA: **3.78**

Member, Sigma Beta Delta National Honor Society (Business, Management, and Administration)

Dean's List and **President's List**, eight terms

CERTIFICATIONS

Microsoft Certified Database Administrator (MCDBA) – January 2006

Microsoft Certified Professional (MCP) – Developing and Implementing Web Applications with Microsoft Visual C#.NET and Visual Studio .NET – December 2005

Microsoft Certified Professional (MCP) – Installing, Configuring, and Administering Microsoft Windows 2000 Server – September 2003

TECHNICAL TRAINING (Instructor-Led Courses)

AppDev – Developing Microsoft ASP.NET Web Applications Using Visual Studio .NET in Visual C# .NET, and Programming with Microsoft ADO.NET – June 2003

References available upon request.