

MATT ANDERSON

DATA ENGINEER/ARCHITECT

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An experienced technologist delivering cloud infrastructure, data processing systems, and web applications.

<i>Skills</i>	Design	Development	Deployment
	Able to engage customers, understand requirements, architect systems, and write technical documents.	Proven results designing, building, and shipping a variety applications using cloud technologies.	Proficient with CI/CD and DevOps processes to build containerized applications running on cloud platforms.
<i>Technical</i>	Python, Java, C#, Go TypeScript, JavaScript Postgres, SQL Server, CosmosDB	Angular, React, Node Spark, Databricks, Data Factory Terraform, Jenkins, Git	Azure, AWS, Docker, Kubernetes Azure AI Search, ElasticSearch Azure Functions, RabbitMQ, Kafka

Experience **Applied Information Sciences (AIS)** June 2016 - Present
Data Architect, Technical Lead, Senior Software Engineer

Currently the Technical Lead and Data Architect for the Defense Technical Information Center (DTIC) digital transformation project. Designed and built a data transformation pipeline to migrate millions of records from AWS to Azure, using parallelized processing with Spark and Databricks to decrease processing time by 1.5 orders of magnitude. Established a culture of DevOps automation to eliminate manual steps in the transformation and containerized application deployment processes. Implemented changes to data input handling, reducing transformation times by 20-60% and added automatic retry capability for non-responsive tasks. Evaluated multiple alternatives after DTIC determined Databricks was not their long-term solution and seamlessly migrated all data processing from Databricks and Spark to Azure Functions. Migrated DTIC to new Azure AI Search instances across all environments, saving \$8-10K/month in Azure Search costs.

Led teams building scalable cloud data processing systems for the National Geospatial-Intelligence Agency (NGA) and another intelligence community customer in AWS. The NGA system was responsible for 10-100 terabytes of daily data volume, averaged 30,000 jobs launched per day, regularly scaled up to 10,000 jobs per hour, and served approximately 1500 weekly unique users.

Technical Lead of a team building a data pipeline for the United States Air Force in Azure. The pipeline watched for new data, extracted a schema, performed validation, applied business rule transformations, created/updated tables based on the schema, and loaded the transformed data into a data warehouse.

Technical Lead of several teams building web applications for use at Wright-Patterson Air Force Base (WPAFB). Established relationships with customers and subject matter experts, gathered and refined requirements, managed agile sprint planning and development tasks, briefed government stakeholders on project status, set technical direction, and contributed to development tasks. Projects included web applications for analyzing geospatial data sets using Angular, Python, Postgres, and Docker to run algorithms on satellite images and visualize weather and environmental data. Developed a metadata extractor in Go and a backend API in Python to integrate with the enterprise ElasticSearch data repository and retrieve records and images for display in a web application.

Supported the redesign of a geospatial image analysis system at WPAFB to support large-scale data storage and parallel processing using Spark, HDFS, and HBase. Investigated, benchmarked, and prototyped strategies for storing and querying millions of images and associated metadata and incorporated those results and lessons learned into a new version of the system's backend API.

Northrop Grumman
Software Engineer 3

February 2013 - June 2016

Architected and built the user interface for a search application using React and Redux. The application was extremely well-received for increasing the visibility of the indexed data across the organization. Built a new user interface in React/Redux to replace an existing legacy front-end. In addition to supporting present functionality, the new interface incorporated recently developed tools for mapping geospatial data and displaying data visualizations using Leaflet, D3, and a Neo4j graph database.

Spearheaded team-wide adoption of numerous best practices, including automated unit and integration testing, automated builds, continuous integration, and usage of recommended design patterns.

Responsible for ongoing development of a textual, audio, and visual data collection, processing, and analysis system used at WPAFB. Led development projects to integrate speech enhancement, language identification, and voice activity detection; geospatial and temporal search and display capabilities; and ingestion and analysis of data from external systems. Added support for new mission types, standardized tasks, an RSS feed, and a REST service to ingest data from external systems into a workflow management system.

F & P America
Senior Supervisor

October 2012 - February 2013

Led the Information and Technology Services department, a team of five responsible for the IT needs of a 24/7 manufacturing facility, including network and server maintenance, software development projects, and end-user support. Assisted with long-term strategy, budgeting, and personnel decisions. Managed SolarSoft ERP and CEBOS trouble report system implementations.

The Reynolds and Reynolds Company
Supervisor, Application Developer

June 2007 - October 2012

Managed a team of six developers across multiple platforms, including iOS/iPhone development, corporate web applications, internal benefits enrollment, document solutions, sales support, and inventory tracking. Mentored two new hires who were subsequently nominated for department- and company-wide rookie of the year awards.

Successful projects included an iPhone GPS application, mobile corporate support site, new customer billing portal, custom inventory management system, implementation of automated build and deploy processes, and support for corporate web applications.

Implemented a custom benefits enrollment system to replace a third-party system, saving tens of thousands of dollars in licensing costs. Created a portal for displaying customer data and invoices, enabling migration away from SAP technology. Developed marketing registration sites to facilitate corporate event management and coordinated with brand marketing to re-design the company website to meet new standards and add dynamic content.

Athletes In Action
Information Technology Department

November 2006 - June 2007

Began development of contact management web application from existing Microsoft Access front-ends to enable users to access data remotely, add additional functionality, and simplify future upgrades. Developed event management component for inclusion in contact management application. Provided occasional help-desk support to end users.

Education

Lawrence Technological University - Southfield, Michigan
Bachelor of Science in Computer Science
Lambda Iota Tau Honor Society, 4.0 GPA