Adam Patterson

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INTRODUCTION

I have more than ***10 years of experience*** working in full stack development and data engineering roles. In addition to my work experience, I have a ***Master's degree in Applied Data Science***.

EDUCATION

Master of Applied Data Science
University of Michigan – Ann Arbor (4.0/4.0)

Bachelor of Science
University of Michigan – Ann Arbor (3.6/4.0)

Certificate in C++ Programming
Washtenaw Community College (4.0/4.0)

SKILLS

Programming Languages
C++, Java, **JavaScript**, **Node.js**, **Python,** PL/SQL, R, SQL, **TypeScript**

Cloud Computing
AWS ECS Fargate, **CloudFormation**, API Gateway, S3, AWS Lambda, IAM

Network Programming
HTTP/REST/RPC APIs, TCP/IP protocols and advanced networking, SSH and SSL

Geographic Information Systems
ArcGIS Pro (Python scripting)

Data Science
Model fitting, evaluation, and imputation (Scikit-learn, PyTorch, etc.), visualization (ggplot2, Altair, MatplotLib, Plotly, etc.), and data manipulation and big data processing (Pandas, Tidyverse, Spark, and MapReduce)

AWARDS

United States President's Volunteer Service Award

PUBLICATIONS

Coauthored 3 journal articles. **Open Researcher and Contributor** (ORC): https://orcid.org/0000-0003-3893-8670

EMPLOYMENT

University of Michigan September 2017 to Present
Michigan Medicine – Ann Arbor, MI
Data Architect Lead (current role)

- Led our data engineering team and provided guidance on data curation topics to a diverse community of researchers. I was appointed as a departmental liaison with Information Assurance in order to ensure alignment with UM information security standards.
- Engineered a data integration system (Python/Pandas) using object-oriented design patterns that cleaned, transformed, and integrated institution wide data sources (SQL databases, HTTP APIs, and flat files) for the production of analysis datasets for scientific research.
- Applied data science (Pandas, Numpy, scikit-learn, etc.), statistical methods, and advanced visualization methods (Plotly, Altair, D3) in order to further the research goals of the Laboratory.
- Ensured compliance with institutional HIPAA regulatory requirements.

School of Information - Ann Arbor, MI
Software Engineer (previous role)

- Developed full stack web applications (Python backend and JavaScript/TypeScript frontend), which were deployed to the Coursera open learning environment, in order to improve learning outcomes.
- Deployed scalable infrastructure using CloudFormation (e.g., JuptyerHub using AWS ECS Fargate) in order to support research studies.
- Engineered flawless full stack telemetry implementations that collected terabytes of data for scientific research (Python, TypeScript).
- Implemented innovative cloud storage solutions that significantly reduced data transfer and storage costs for the Laboratory.
- Developed software that automated database migrations.
- Ensured compliance with FERPA regulations.

Washtenaw Community College January 2015 to September 2017
Energy Services - Ann Arbor, MI
Systems Analyst

- Developed multiple full stack web applications (Java, JavaScript) including a key request system and an energy dashboard that integrated the college's 19 EIG Shark and Nexus Meters (Modbus API) for monitoring energy usage.
- Developed SQL queries and visualizations in order to monitor and improve work performance and inventory audits.
- Performed security audits on Division's Windows and Linux servers and devices and identified improvements to Division's IT security infrastructure.

FEATURED GITHUB PROJECTS

Please visit my **GitHub Profile** at: https://github.com/adamjpatterson

- **Socketnaut** Scalable multithreaded Node.js servers made easy.
- **Network-Services** Type-safe asynchronous RPC.
- **JupyterLab Telemetry** A JupyterLab telemetry extension.
- **Python memoiz** A thread-safe memoization decorator for Python.