Evan D. Oman

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Experience

ZAIS Group LLC ***Senior Software Architect*** **April 2021 - Present**

- ▷ Led technical efforts to develop data-focused applications for a portfolio manager with $7B in assets under management
- ▷ Designed cloud (Azure) architecture, developed data pipelines (Airflow), implemented complex financial calculations (Python)
- ▷ Worked with executive leadership to set project direction, interpreted domain knowledge from SMEs to guide rest of team

Self-Employed ***Data Science Consultant (Part Time)*** **2016, 2020, 2023 - Present**

- ▷ Worked part-time as a data science consultant with Salt IO for clients in the financial industry (ZAIS, Wells Fargo, DBRS)
- ▷ Gathered requirements from clients; researched and evaluated approaches; developed and released software systems

Black River Systems Co. ***Software Engineer*** **May 2015 - April 2021**

- ▷ Developed analytical software systems and investigated machine learning solutions for several government agencies
- ▷ Interfaced directly with customers and directed engineering efforts, authored two successful contract proposals ($1.1M total)
- ▷ Received shareholder's award for technical work and for starting and leading an informal technical speaking series

Projects

Portfolio Testing, Optimization, and Construction **ZAIS**

- ▷ Led the development of a Python web service which allows portfolio managers to test, optimize, and construct loan portfolios
- ▷ Helped collect and merge requisite data from varied sources, implemented compliance tests based on legal documentation
- ▷ Implemented linearly constrained greedy optimization approach based on Excel prototype, developed live data visualization

Tenant Name Disambiguation **Independent Consulting, Wells Fargo**

- ▷ Working to disambiguate tenant names in a dataset of commercial real estate leases (over 100k rows, no ground truth)
- ▷ Researched approaches, built system around the Python Dedupe library, using clustering metrics to evaluate performance

Simulation Model Refactoring, Performance Improvements **ZAIS**

- ▷ Improved Monte Carlo simulation model by adding tests, fixing bugs, improving data access, and improving model runtime
- ▷ 3x runtime improvement using line profiler and additional Numba, prototyped 250x improvement using 500 AWS λ functions

Loan Implied Ratings Model **Independent Consulting, ZAIS**

- ▷ Worked closely with SME to translate an Excel model into a more versatile Python app. (as both CLI tool and Teams Bot)
- ▷ Reverse-engineered process, developed a more efficient approach using a quadratic programming formulation of the problem

Low SWaP Threat Detection System **Black River Systems**

- ▷ Lead the R&D of an edge computing system which applied deep learning techniques for signal ID and threat detection
- ▷ Managed team of 3 other engineers, collected data, trained and tuned models using on-prem Titan V machine (Keras, Ray, Docker), designed and developed inference application (Python), integrated with upstream and downstream system interfaces (Redis Event Queue, Custom Messages over UDP)

Software Improvement Effort **Black River Systems**

- ▷ Expanded the quality, reliability, availability, and feature sets of a suite of legacy, multi-platform `C++` desktop applications
- ▷ Authored unit tests (Catch2), refactored complex code (`C++`), developed automated testing system (Java), led adoption of automated testing, GitLab CI, and Docker

Sensor Scheduling Research **Black River Systems**

- ▷ Helped research and prototype sensor scheduling algorithms (0-1 integer programming, meta-heuristics) and developed a simulation framework (Matlab) to evaluate the performance of these approaches

Restaurant Review Aspect/Sentiment Extraction(Spark, Scala) **Consulting Effort**

- ▷ Extracted aspects and corresponding sentiments from online reviews of several restaurants using CoreNLP, Spark, and Scala
- ▷ Researched info. extraction algorithms, tested different methods, processed & cleaned data, and communicated performance

Dynamical Systems Research(Python, Mathematica) **University of MN Duluth**

- ▷ Studied behavior of singular perturbations on a family of functions using several numerical, visual, and analytical techniques

Education

University of MN Duluth ***M.S. Applied Mathematics, CS Minor*** **May 2015**

- ▷ Studied under Teaching Assistantship and Chancellor's Fellowship, 20 credits of graduate level CS coursework, **GPA: 3.67**

Bethany Lutheran College ***B.A. Mathematics*** **May 2013**

- ▷ Graduated Magna Cum Laude with **in-major GPA of 3.8**, 2013 Student Body President, graduated in three years

Skills

Languages/Frameworks/Tools: Have worked in `Python`, `Java`, `Scala`, `C`, `R`, `Perl`, LaTeX; `git`(Github: EvanOman), Flask, Apache Spark, Docker, Gitlab CI, Azure Devops CI, Linux CLI/Scripting; Some knowledge of `C++`, `Matlab`