ALECBRAZEAU

SOFTWARE ENGINEER

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I build software that distinguishes the signal from the noise, helping organizations use the right data to make decisions that matter most.

EXPERIENCE

DEWBERRY ENGINEERING **2018 - PRESENT**

Software Engineer

Previously: Geospatial Programmer, Technical Specialist

- Lead Software Architect of Computer Science and Informatics practice; working with management team to establish practice, create workflows, and craft client tools that merge innovation and efficiency with big-data requirements.
- Administrator of company GitHub, conducting regular code review and outreach to colleagues to discuss efficiency trade-offs and optimization techniques.
- Work fluidly across languages (Go, Python, JavaScript, etc.) and tools (Docker, Kubernetes, etc.), selecting the language that fits project requirements and taking steps to build competency in any tech stack required.
- Maintain internal Python library of custom geospatial algorithms that are leveraged in federal, state and local contracts to improve accuracy in emergency response and flood prediction assessments. *Use Case*
- Automate data pipelines and design architecture for a national elevation raster service used across internal teams to inform water resource engineering models.
- Design, architect and build data aggregation system—development in Docker and deployment on Kubernetes (AWS EKS)—to interact with the full suite of data necessary for hazard mitigation following Hurricane Harvey.
- Implement a download system and ETL for NOAA AIS data (4 billion annual data points) using a microservice system containing a Preact UI, Express.js REST API, Redis message queue and PostgreSQL database.
- Modeled and simulated 10,000+ Monte Carlo models to determine probabilistic risk of flooding to inform FEMA flood insurance guidance.
- Mentor colleagues—both technical and non-technical—interested in increasing their skills or learning more about computer science and programming.

THE NATURE CONSERVANCY **2016 - 2018**

Graduate Consultant

- Developed first state-wide carbon sequestration baseline assessment through an in-depth geospatial/policy analysis using Markov Chains and Monte Carlo Simulations. *Publication* *AGU*
- Informed the strategic direction of The Nature Conservancy's Colorado Chapter through carbon sequestration policy recommendations.

LANGUAGES

Go · Python · JavaScript
SQL · Bash · HTML · CSS

COMPETENCIES

Distributed Systems/ Concurrency

Scientific Computing

Cloud Services (AWS, Azure, Google)

Relational Databases

Data Pipelines/ ETLs

CI/CD

Agile Development

TECH STACK

Docker · REST · Kubernetes
Microservices · Redis
NoSQL · ReactJS
Git · PostgreSQL

EDUCATION

University of Colorado, Boulder, 2017 — Master of Environmental Policy and Management
University of Denver, 2016 — Bachelor of Science in Environmental Science and Geology