alec **brazeau**

software engineer

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✚ who

A big picture thinker that still sweats the details;
I'm optimistic about the future and want to spend my life making tools that will help build a better tomorrow.

✚ what

Principal Software Engineer · Dewberry Engineering   2020 to Current
– Lead design and development of data-intensive applications used for geospatial analysis and planning:
  • Built a dynamic road assessment tool for the State of New Jersey to help prioritize infrastructure projects and planning.
  • Created an internal service that produces base elevation data for geospatial projects across company; pipeline crawls publicly available elevation datasets and updates PostgreSQL database to create a mosaic of best-available topographic data that can be queried, sliced, exported.
  • Designed pipeline to collect and analyze 50 billion real-time connected vehicle data points to assess evacuation activity during Hurricane Ian and inform disaster preparedness/urban planning studies.
  • Conceptualized and built a bespoke data management system, allowing users to search, tag, filter and export over 3.6 TB of data for the Texas General Land Office.
  • Overhaul the backend, pipeline, and user experience for State of Colorado's flood threat monitoring website that enables residents to check emergency weather status and projected impacts by location.
– Administrate company GitHub.
– Oversee and implement cloud computing strategy.
– Grew Computer Science and Informatics team into core business unit with 10 employees.
– Conduct code review and develop technical work-streams for junior employees.

Software Engineer · Dewberry Engineering   2018 to 2020
– Automate workflows and develop RESTful APIs for custom web applications and data processing pipelines.
  • Designed and implemented backend database and ETL operations for national boat and shipping traffic data, consuming and serving 8 billion points for public download and use.
  • Produced 5+ TB of high quality engineering data to act as the basis of the Commonwealth of Virginia's Coastal Resilience Master Plan. Refactored and deployed the frontend Coastal Resilience Web Explorer.
  • Architected a custom, web-map based dashboard for State Departments of Transportation to predict how flooding will impact transportation assets in real-time.
  • Conceptualized, developed, and deployed an open-source alternative to Yarkon S3.
– Lead organization-wide SWE community of practice.
– Establish Computer Science and Informatics team within organization

GIS Analyst · The Nature Conservancy   2016 to 2018
– Developed Colorado's first state-wide carbon sequestration baseline assessment using Python GIS libraries.
  • Utilized Markov Chains and Monte Carlo simulations to project sequestration into the future.

✚ how

LANGUAGES	FRAMEWORKS	TECH
Go (Golang)	React	Cloud Services (AWS, Azure, GCP)
Python	Flask	Docker
SQL	Node.js	PostgreSQL
Bash	Webpack	Redis
TypeScript	RESTful APIs	Kubernetes
JavaScript	web3.js	CI/CD
	Django	ElasticSearch

✚ education

University of Denver
Bachelor of Science 2016

University of Colorado, Boulder
Master of Science Environmental Science 2017