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## Geoscience Data Specialist

I access deeper value in natural resources by evaluating assets through a combination of data science and geological analysis. My impact comes from facilitating collaboration between technical and business-oriented stakeholders.

### Areas of expertise include:

Python SQL Server  
Python - Pandas/SciKit-Learn  
Tableau/Power BI/Excel

Geomodelling/Petrophysics  
Petrel/Petra/Techlog  
Linux/Windows Scripting

Geospatial Analysis  
ArcGIS/QGIS  
MS Geoscience PSU

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## Key Professional Experience

Rachio, Denver, CO

November, 2016-Present

### Water Resources Researcher - Data Scientist

Rachio is the maker of the #1 best-selling Smart Sprinkler Controller.

#### Example Projects:

- Developed new product line based on Rachio's user data focused on water municipality operations, showcasing analytic potential of aggregated user data, built on a platform of SQL & Elasticsearch Queries, and data aggregation/analysis code built with Python, Pandas, NumPy, GeoPandas, SciKit-Learn, SciPy, and Plot.ly. Product line enabled new sales channel, expected to generate \$100K of revenue in year 1.
- Designed and implemented sensor tracking study to provide scientific backing for an active provisional patent [P264038.US.01] – named as inventor. Technology forms basis of enhanced weather product, targeted to drive \$125K in ARR.
- Identified and characterized 3 customer segments/personas, driving user research, marketing efforts, and product design. Segments were identified using unsupervised machine learning/K-Modes clustering, silhouette analysis and modal cluster selection.
- Natural Language Processing – Collected and evaluated several hundred Amazon product reviews using Beautiful Soup, NLTK, and Spacy to evaluate sentiment, generate word clouds, to characterize brand value. Collaborated with sales team to optimize A+ content, driving over 30% year-over-year growth.
- Evaluated Sales and Conversion Rate data to develop a model of Amazon Pageviews. Results validated 3rd Party assessment of customer engagement, and informed Rachio's Amazon Ad strategy to focus on exclusively on holidays, helping to improve efficiency of Advertising budget by over 20%.
- Provided analytical insight into customer interaction with the device, app, and marketplace. Metrics such as customization, engagement, geographic distribution, and social network helped inform app redesign, resulting in more targeted features, and improved task-completion

Ayuda Companies, Denver, CO

February- August 2016

### Project Management - Geologist

Managed and implemented extensive environmental field programs for various Department of Defense projects throughout the West. Encouraged staff development, trained and implemented best-practices for environmental data, generate reports for multiple regulatory bodies.

## Professional Experience (Cont.)

C12 Energy, Denver, CO

March 2009-Sept. 2015

### Technical Contributor - Geologist

C12 Energy is a pioneering Cleantech project development company focused on reducing the carbon footprint of various industrial projects by identifying and developing offset opportunities centered on Enhanced Oil Recovery (EOR), and Carbon Capture & Sequestration (CCS) technologies. I was the first employee at this Sequoia Capital-backed startup.

#### Key Responsibilities:

- Evaluated potential projects throughout the US by leveraging geographic analysis of infrastructure and geology, accounting for local and regional power generation, transmission, and regulatory trends. Analysis lead to the identification and acquisition of 3 projects totalling over \$75M in capital investment.
- Estimated project value by conducting thorough geologic evaluations/simulations of target acquisitions. Analyses frequently consisted of datasets containing tens of millions of data points. Analysis was the basis for Series B funding of over \$100M.
- Provided technical analysis that formed underpinning of EPA UIC Class VI Geologic Sequestration Well permitting rules, governing the design and operation of all CO2 injection wells in the US.
- Proffered professional testimony regarding Kansas Corporation Commission Docket 15-CONS-009-CUNI, seeking to establish first CO2 Unitization Effort in the state of Kansas. Evaluated reservoir potential, designed completions, advised pattern designs, and provided technical support for Unitization Activities. Commission ruling set far-reaching legal precedent for State Oil & Gas activities.

Haley & Aldrich, Boston, MA

September 2006 - March 2009

### Technical Analyst - Environmental Geologist

Performed field work, contractor management, and litigation support, for a variety of private/industrial and SuperFund properties. Designed and implemented environmental sampling, health and safety, and geotechnical programs. Mapping, database management, report generation, and Project Management.

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## Education

General Assembly Data Science Intensive

October, 2016

**Masters of Science**, Geosciences

December, 2006

Pennsylvania State University

**Bachelor of Arts**, Geology

May 2004

Colby College

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## Professional Achievements

- Professional Geologist, Kansas State Board of Technical Professions, License #863
  - 2015-2016 Denver Petroleum Club Mentor/Mentee Program
  - 2016 RMAG Mentor/Mentee Program
  - Author/Inventor of patent P264038.US.01 concerning Rain Data Scheduling Variation.
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