James P. Cassanelli, Ph.D.

Data Geoscientist – Planetary Geophysics Doctorate

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EDUCATION & RESEARCH

Brown University: Ph.D. in Geology and Geophysics 2013 – 2019

Brown University: M.Sc. in Geology and Geophysics 2013 – 2015

Emphasis on: planetary science, geophysics, numerical modeling

Thesis topic: Geophysical and numerical analysis of planetary geologic processes, primarily martian hydrology.

University of Connecticut: M.Sc. in Geology and Geophysics 2009 – 2011

University of Connecticut: B.S. in Geology and Geophysics 2005 – 2009

Emphasis on: hydrogeology, geology, geophysics

Thesis topic: Regional scale geostatistical analysis of spatial and temporal trends in groundwater salinity.

PROFESSIONAL EXPERIENCE

Geologist – Occidental Petroleum Corporation (formerly Anadarko) March 2019 – Present

- Generated maps to rank TX Delaware Basin asset acreage and refine development strategies through geostatistical analysis utilizing unsupervised machine learning clustering. Results adopted by company to guide >$1 billion development program.
- Developed multivariate analysis models to forecast/optimize well production as part of the Analytics & Data Science team.
- Enhanced drilling efficiency through statistical predictions derived from a series of tools developed using Python and SQL.
- Greatly reduced manual workload by developing a stochastic optimization algorithm to automate completions design.
- Improved operational workflow efficiency by producing a suite of Python-based geologic software tools.
- Interpreted real-time geologic/drilling data to optimize (>90% in-zone) placement of ~20 Delaware Basin horizontal wells.
- Regional and local scale geologic structure and hazard mapping to generate pre-drill geologic prognoses.
- Collaborate with development geologists, drilling engineers, and field staff to facilitate drilling activities.

Hydrogeologist – Leggette, Brashears, and Graham Inc. June 2010 – April 2013

- Collected and documented critical data for water supply exploration and environmental remediation projects.
- Conducted data and sample analyses and prepared technical reports for clientele and regulatory agencies.
- Completed projects on time and under budget by consistently maintaining a billable time percentage >90%.
- Worked in a team-based environment maintaining close communications with colleagues and managers.

COMPUTATIONAL & TECHNICAL COMPETENCIES

Languages – Python | MATLAB | JavaScript/HTML/CSS | SQL | Git | some experience: C++, Fortran, VB, R

Programs – ArcGIS | DSG/Petrel/Petra | StarSteer | SAS JMP | ADOBE suite | ERDAS | ENVI | MS Office

Modeling and Geoscience

- Extensive experience in scientific computing, numerical modeling (finite difference & volume), and quantitative analyses.
- Skilled in utilization/visualization/interpretation of geospatial, geologic, geophysical, remote sensing, and other datasets.
- Application of geostatistical and geophysical analyses to answer business and scientific questions.

Data Science and Analytics

- Experienced in manipulation, transformation, processing, and storage of large data sets (Python, SQL, Access, Excel).
- Application of data science/statistics, including supervised/unsupervised machine learning, to inform business decision-making.
- Created and maintain a coding/data science personal blog: *jpcassanelli.com/Blog*

General

- Adept in the integration of disparate data (in type and scale) and models to address scientific and business problems.
- Significant experience in technical writing and communication including publication of >10 papers and delivery of presentations at numerous national and international science and industry conferences.