JENICA ANDERSEN

DATA SCIENTIST + EARTH SCIENTIST

Summary

Data Scientist with more than ten years of domestic and international experience as a Data Analyst and Earth Scientist. Skilled in working complex projects from conception to conclusion and presenting results to professional audiences. Success with prior geospatial, big-data research lead to creation of subsidiary company. Seeking to apply skills and experience to reach solutions in the fields of ESG, conservation, sustainability and regenerative agriculture.

Experience

Metis — Worked Remotely
Data Scientist — Dec. 2021 to Aug. 2022

- Completed 7-month Data Science immersive program focused on writing robust, and well-documented Python code for Machine Learning, Statistical Analysis, Predictive Modeling, Deep Learning, Data Engineering and Business Intelligence
- Developed computational algorithms and used statistical methods to find patterns and relationships in large volumes of data using dominantly Python packages such as NumPy, pandas, matplotlib, seaborn, scikitlearn, and NLTK
- Portfolio contains 7 end-to-end, independent projects with Business application as focus. See *Projects* section for description of key projects

AIM GeoAnalytics — Missoula, MT
Data Analyst, Senior Geologist — Dec. 2013 to Dec. 2019

- Managed projects, delivered technical reports, facilitated client workshops, and conducted trainings with diverse research groups
- Presented at professional conferences
- Big Data project collaborated with infrastructure team to compile diverse data into Postgres database and visualized data in QGIS as an automated solution to create end-user controlled probability maps. My work lead to the creation of a subsidiary company.
- Collected and analyzed diverse data, identifying parameters of interest, and building predictive models
- Received training on database design and management

Dartmouth College — Hanover, NH
Adjunct Faculty — Sept. 2011 to Aug. 2013

- Lectured weekly to students from diverse fields of study, instructed laboratory sections, aided field trips and mentored students

Statoil Hydro — Stavanger, Norway
Exploration Geologist Intern — June 2010 to Aug. 2010

- Explored and visualized diverse data using ArcGIS, modeling findings and discovering a lead on a new resource in the North Sea
- Presented results to audiences with a range of expertise and was offered funding to continue the research

Sunburst Consulting — Billings, MT
Lead Geologic Consultant — Aug. 2009 to Aug. 2011

- Successfully lead real-time drilling operations by developing rapid analyses on multiple data types for immediate implementation
- Integrated to guide high-risk decisions and steer operations with a clean track record of target drilling
- Responded to inquiries and requirements, advised cross-discipline personnel and collaborated with clients
- Published detailed documentation reports with state governments and stakeholders across the enterprise

Contact

jenica.andersen@gmail.com
jenica-andersen
jenica-a

Skills

GEOSPATIAL

ArcGIS/QGIS
ERDAS Imagine
ESRI
GoogleEarth
PETREL

PROGRAMMING

Python
SQL
SciKit-Learn
Web Scraping
json
Streamlit
terminal commands
Familiar with R
Trained in SPARK

MACHINE LEARNING

Natural Language Processing
Deep Learning
CNN
NMF
kNN
RandomForest
Sentiment Analysis
Linear/Logistic Regression
TensorFlow/Keras
NLTK
PCA
TF-IDF

CLOUD COMPUTING

GitHub
AWS (S2 and EC3)
Trained in Hadoop

VISUALIZATION

Tableau
PowerBI
MatplotLib
Seaborn

Education

Dartmouth College 2011 to 2013
Master's of Science, Earth Sciences
See Projects section for description of Master's thesis, Mobilization of mercury-contaminated sediment in a regulated river, Androscoggin River, northern New Hampshire
Coursework included: Remote Sensing, Environmental Geomechanics, Analysis of Environmental Data, Geophysics, Advanced Surface Processes, GeoChemistry, Pedagogy in Earth Sciences, Critical Analysis in Earth Sciences, and Introduction to Entrepreneurship

National Geothermal Academy 2013 to 2013
Certificate in geologic, engineering, and economic solutions to Geothermal Energy production, with top industry experts

University of Potsdam, Germany 2008 to 2009
Bachelor's of Science, Dual Degree--International Field Geosciences
See Projects section for description of Bachelor's thesis work, Biogeochemical monitoring of geological CO2 storage in saline aquifers
Coursework included: Advanced GIS, Organic Petrography, Petroleum Geology, Paleontology (field course in Sweden), Field Mapping in France, and Structural Geology in Greece

University of Montana, Missoula 2004 to 2008
Bachelor's of Science, Geosciences
Bachelor's of Arts, Creative Writing
Watkins Scholar--Interdisciplinary project work, Riverside Geology, a guide to the geology of the Clark Fork River

Projects

Engineering a Data Pipeline for Topic Modeling the New York Times

- Created data-pipeline from inception to operation, pulling in New York Times archive, and modeling topics on streamlit app
- Deployed API get-request to obtain 747,000 articles, converted json to tabular data, stored in SQL database in AWS S3, processed in EC2
- Launched end-user controlled Streamlit App for topic modeling and WordCloud creation

Deep Learning for Conservation: Classifying Drone Images from Protected Lands

- Classified 21,500 low-resolution drone images as containing columnar cacti or not--data came from effort to develop solutions to automate surveillance of protected areas
- Used python code to create custom Convolution Neural Networks (Tensorflow and Keras) unsupervised ML model
- Custom model contained rescaling, BatchNormalization, SeparableConv2D, MaxPooling2D, GlobalAveragePooling, and Dropout layers and achieved accuracy of 99.3, out performing MobileNet transfer learning model trained on the ImageNet database

"How I Wonder What You Are", Classifying Cosmic Light Sources, Using Logistic Regression

- Classified cosmic point sources of light as star, quasar or galaxy based on spectral characteristics
- Used python code to build Logistic Regression, kNN and Random Forest models for performance comparison
- Used MinMaxScaler in preprocessing, RandomizedSearchCV and GridSearchCV in validation, and MatPlotLib and Seaborn to visualize results; achieved model ROC score of 0.9983

The State of ESG: Using NLP to Illuminate Modern Corporate Sustainability Issues

- Conducted Unsupervised NLP on 1,000 shareholder resolutions from ceres.org, modeling the top semantically coherent topics using python code
- Preprocessed corpus with Regex and Porter stemmer, used CountVectorizer and NMF for modeling and clustering, modeled sentiment analysis
- Visualized results with MatplotLib and Wordcloud, and demonstrated specific application via custom Streamlit app

Mobilization of mercury-contaminated sediment in a regulated river, Androscoggin River, northern New Hampshire

- Master's thesis researched the fate of contaminants in rivers and oceans, by modeling flow velocity and distribution of contaminants in regulated river
- Collected field samples and measured 7Be and 210Pb concentrations to calculate radiometric age and sediment residence times, and performed other physical and geochemical statistical analyses on samples
- Created ArcGIS and River2D maps and models to visualize results
- Defended research and presented my published findings at Geological Society of America conference

Biogeochemical monitoring of geological CO2 storage in saline aquifers

- Undergraduate thesis work assisted with researching effects of CO2 injection into the subsurface as part of multinational effort by Ketzin Group in Potsdam, Germany to develop solutions to climate change

Volunteering

WiDS(Women in Data Science), Puget Sound · Co-Lead Marketing Team Current

Clark Fork School · Vice President of Board of Directors 2018 to Current
Missoula, MT

Toastmaster's International · Club President 2017 to 2020
Missoula, MT

STEMulating Diversity and Inclusion · Co-founder of AAPG special interest group 2019

Languages Spoken

English · Native speaker

German · Intermediate fluency