

J GARRECHT METZGER PHD DATA SCIENTIST

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Skills

DATA SCIENCE

Technical Communication
Python
Adobe Suite
GitHub
SQL
Web Scraping
Natural Language Processing (NLP)
Linear, Logistic Regression
SVD
PCA
API
Machine Learning
Neural Networks
Streamlit
VSCode
Jupyter Notebooks
Seaborn
KNN
K-means clustering
Random Forest Modeling
Tableau
Topic Modeling
Recommendation Systems
LDA

GEO SCIENCE

Mass Spectrometry
MATLAB
IHS Petra
Field Sampling of Water, Rocks, Soil, and Microbes
Earth History
Box Modeling
Biogeochemical Carbon and Sulfur Cycles
Geochemistry of Natural Waters
Geobiology
Stratigraphy
Geochemists Workbench

ELECTRONICS

RaspberryPi
Sensors
Arduino
VPN
Soldering
VNC/SSH
Microcontrollers
Analog Recording
ProTools
Audio Recording Engineering
Audio Mixing and Mastering
Matplotlib Live

Experience

Metis Data Science Bootcamp

Data Scientist

San Francisco Bay Area

Jan. 2021 to Current

Intensive, immersive 12-week data science bootcamp with a strong emphasis on project-oriented skill-building in problem-solving, data wrangling, statistical modeling, machine learning, and communication of deliverables.

Selected Project Highlights

- **MTA Turnstile Traffic Analysis:** Objective: Identify MTA turnstiles with highest traffic in order to place street teams for lead generation and fundraising, Data: MTA Turnstile data (scale: millions of observations), Tools: Python, Adobe Illustrator
- **How to Help Craigslist Their Instruments:** Objective: Identify features that predict advertised instrument price on craigslist.com, Data: Scraped results from San Francisco Bay Area in Jan 2021, Tools: BeautifulSoup, polynomial transformations, Notable Results: don't list your instrument between 2-6AM
- **Predicting Winners and Losers for NBA Games at Halftime:** Objective: Used classification models to predict which NBA team would win at halftime Data: NBA official stats API, >20,000 matchups over 20 years of regular season play, Tools: Python, scikitLearn, Numpy, pandas, seaborn, Adobe Illustrator, official NBA API, PostgreSQL, Logistic Regression, Linear Regression, Random Forest
- **Good, Great, Excellent, Quality Reviews of Amazon Electronics:** Objective: Used topic modeling to see how products are discussed in the reviews and how that compares to how they are organized by Amazon. This knowledge may enhance future user experience, Data: 12 years of electronics product reviews Tools: LDA, Topic Modeling, Adobe Illustrator, Notable Results: Tablets! Topic modeling revealed tablets as a distinct subject matter that was frequently discussed but tablets were not organized in the same structural way as other electronics Amazon.com
- **Building a Customizable Content-Based Spotify Song Recommender:** Objective: Used the metadata and audio features derived from the song content itself to recommend songs to a user independent of other user ratings. Allow customization by incorporating the selected inclusion or exclusion of features like 'loudness' and 'tempo' when selecting a recommendation, Data: Spotify API, scraped every unique track (~82,000) Tools: Cosine distance and k-means clustering

Sonoma County Poultry

Ranch Manager

Petaluma, CA

Nov. 2019 to Dec. 2020

- Managed 3 ranches for a family-owned and operated boutique duck farm operation in Sonoma County, CA
- Designed and built new water delivery system that feeds tens of ducks simultaneously
- Structurally updated facilities, which increased the quality of life for the ducks, decreased predation and general mortality, resulting in increased yield from hatchling to harvest

Independent Geological Consultant

Geological Consultant

Remote

Apr. 2018 to June 2019

- Independent advisor for recovery of oil and gas in historic and abandoned terrestrial oil and gas wells in southeast Texas

The Drawing Board

Bar Designer & Manager

Petaluma, CA

Nov. 2016 to June 2017

- Designed the physical bar and keg system
- Managed boutique bar inventory
- Managed bar menu

ESM Prep and Independent Tutor

Private ACT & SAT Tutor

San Francisco Bay Area

Jan. 2016 to Jan. 2017, June 2017 to Apr. 2018

- Worked with students to prepare them for ACT & SAT college entrance exams as well as Geology
- Designed science curriculum

Council for Aid to Education (CAE)

Academic Consultant

New York City, NY

Jan. 2015 to Jan. 2016

- Composed online material (homework and exams) for college-level chemistry, biology, and physics courses for the non-profit Council for Aid to Education

Washington University in St. Louis

Student Lab Methods Instructor

St. Louis, MO

2010 to 2014

- Trained 11 undergraduate and graduate students in lab methods (elemental extractions, organic extractions, rock processing, mass spectrometry), data processing, and modeling
- Mentored an undergraduate student for their senior research which included a two-week field sampling trip

Teaching Assistant

- Courses: Sedimentology and Stratigraphy; Earth and the Environment; Biogeochemistry
- Duties: Graded homework, labs, and exams; led lab; assisted and co-designed field trips

St. Louis, MO

2010 to 2013

Furman University

Teaching Assistant

Greenville, SC

2008 to 2009

- Course: Introduction to Environmental Science
- Duties: Graded labs and exams; assisted professor during labs

Education

Washington University in St. Louis

PhD Earth and Planetary Sciences 2014

Aug. 2009 to Dec. 2014

AM Earth and Planetary Sciences 2011

PhD Thesis: "The Late Ordovician Biogeochemical Carbon Cycle"

Furman University

B.S. Earth and Environmental Sciences 2009

Aug. 2005 to May 2009