

NATHANIEL SPEISER

DATA SCIENTIST

Experience

Metis · Remote - Boulder, CO
Data Scientist · Jan. 2021 - Mar. 2021

Completed an intensive project-focused online data science bootcamp. Self-designed data science projects from conception to presentation; including data collection, data management, exploratory data analysis, modeling, and visualizations. Projects include:

Predicting In Game SSB Melee Win Probabilities

- Calculated statistics on more than 18,000 games of Super Smash Bros. Melee using community-written tools and self-developed algorithms
- Created Tensorflow and Scikit-learn classifiers to predict in game win probabilities at any point in a match, achieved average log loss of 0.25 and ROC AUC of 0.98
- Developed and deployed interactive Streamlit app where users can upload a game and see odds over time and other game statistics

Wheel of Time NLP

- Used NLTK, TfidfVectorizer, and NMF to topic model main 14 *Wheel of Time* books
- Constructed undirected graphs of character interaction and created interactive network visualizations
- Built interactive Streamlit app to visualize findings of topic modeling and network analysis

Exoplanet Classification

- Utilized tuned XGBoost model to classify objects of interest catalogued by the Kepler Space Telescope as candidate exoplanets with 91% recall
- Created interactive Tableau dashboard of Kepler Objects of Interest, including findings of modeling process

Board Game Popularity Prediction

- Used BeautifulSoup to scrape data on 10,000 board games from BoardGameGeek.com
- Programmed linear regression with LASSO regularizations models to predict the popularity of board games with final R^2 of 0.49

MTA Turnstile Analysis

- Analyzed MTA turnstile data to provide actionable insights for efficient allocation of outreach personnel for fictional charity organization
- Merged Google Maps API data with census income data to find stations that would result in maximum financial benefit for organizers

University of Colorado Boulder

Graduate Research Assistant · Jan. 2019 - Dec. 2020

Graduate Research Assistant in Dessau Physics Lab:

- Used Python to analyze magnetic response data of micron-sized samples in order to determine their material properties
- Ran simulations in Igor to simulate behavior of electrons in next generation angle-resolved photoemission spectroscopy (ARPES) chambers
- Measured the electronic behavior of novel materials with ARPES at national lab synchrotrons
- Fabricated samples of novel p-wave superconductors using Focused Ion Beam liftout techniques

Northwestern University · Evanston, IL

Undergraduate Research Assistant · Jan. 2016 - June 2018

Undergraduate Research Assistant in Stern Physics Group:

- Examined new methods for exfoliating monolayer materials
- Investigated optical and electronic properties of monolayer transition metal dichalcogenides
- Contributed to paper on properties of multilayer Molybdenum disulfide
- Wrote undergraduate thesis on heterostructures of few-layer hexagonal Boron nitride and Molybdenum disulfide

ICF International

Data Analysis Intern · Summer 2015

- Used Tableau to create data visualizations for healthcare companies and Centers for Disease Control and Prevention
- Generated social media reports for National Eye Health Education Program
- Helped create internal budget-tracking tool

Contact

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Education

University of Colorado Boulder
M.S. Physics 2020

Northwestern University
B.A. Physics 2018

Skills

PROGRAMMING LANGUAGES

Python

SQL

C++

PYTHON LIBRARIES

Scikit-learn

pandas

NumPy

SciPy

Tensorflow

XGBoost

NLTK

Selenium

BeautifulSoup

DATA VISUALIZATION

Matplotlib

Seaborn

Tableau

plot.ly

Streamlit