

Erik Magnusson

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Summary

I am a graduate student studying computational data analytics at Georgia Tech, excited to apply my skills in a data science position. I will bring strong communication and business understanding from my consulting experience as well as machine learning and statistical analysis proficiency from my coursework.

Experience

Science Applications International Corporation (SAIC)

Washington, D.C.

DATA SCIENTIST INTERN

Jun 2021 - Aug 2021

- Automated the lifespan-extending maneuvers of a satellite using deep reinforcement learning with TensorFlow+Keras
- Simulated satellite lifespan by designing a custom OpenAI Gym environment to replicate the conditions of geostationary orbit
- Used pipelines to integrate a Java-based orbit propagator with a Python implementation of the proximal policy optimization algorithm
- Led weekly presentations with senior management to communicate the technical details of our team's modeling progress
- Optimized local CPU resources to run orbit propagator and model training in parallel

DSM Engines LLC

San Francisco, CA

SENIOR BUSINESS ANALYST

Dec 2020 - Jan 2021

- Led team of analysts in the delivery of analytics consulting services for HP Inc, ranging from defining business objectives and global client communication to ad hoc statistical analysis and digital product launches
- Determined the most effective discount rates for marketing campaigns using A/B testing

BUSINESS ANALYST

Jul 2018 - Dec 2020

- Built and deployed ETL pipelines, dimensionally-modeled relational databases, and executive-facing dashboards (*Tableau/Power BI*) to support web applications and inform client decisions
- Automated a client's legacy Excel reporting by embedding SQL stored procedures in VBA, cutting report generation time by over 90%
- Isolated which partner website features were most associated with compliance violations using chi-squared testing
- Resolved dashboard access issues by leveraging the Tableau REST API to gain insight into the user permissions decision tree

Projects

Firm Strategy and Financial Performance with NLP | github.com/emagnusson88/firm-strategy-nlp

ACADEMIC PROJECT

- Predicted whether a company would outperform the S&P 500 with an accuracy of 0.67 using a k-nearest neighbors classifier
- Used the Alpha Vantage API to collect historical stock returns for public consumer packaged goods companies
- Created a filtered bag-of-words model from the forward-looking text of each company's SEC annual reporting
- Reduced dimensionality with PCA and applied k-means clustering to group companies by their strategic terminology

UFC Prediction | github.com/emagnusson88/UFC-Prediction | ufc-prediction.herokuapp.com

PERSONAL PROJECT

- Predicted the winner of upcoming fights with an accuracy of 0.66 using a linear SVM classifier
- Scraped past MMA event and athlete data from the official UFC Stats website with BeautifulSoup
- Constructed a multi-step model that estimates each fighter's performance metrics (e.g., *significant strikes*, *submission attempts*) with autoregression on a rolling training data set before predicting a winner
- Developed a web application using the Streamlit open-source framework and deployed via the Heroku cloud platform to display predictions

ACC Scouting with Computer Vision | github.com/emagnusson88/UVA-Football-Performance

CAPSTONE PROJECT

- Saved the UVA coaching staff time by automating the detection and labeling of offensive football formations in opponent game film
- Located players on grayscale mp4 frames with a logit model and used a Hough transform to isolate line of scrimmage and hash marks
- Classified player formations in scouting footage with a multilayer perceptron and a decision tree of potential formations

Education

Georgia Institute of Technology

Atlanta, GA

M.S. COMPUTATIONAL DATA ANALYTICS | GPA: 4.0/4.0

2021 - 2022

University of Virginia

Charlottesville, VA

B.S. SYSTEMS ENGINEERING

2014 - 2018

Technical Skills

Languages Python (*Pandas, NumPy, Sklearn, Matplotlib, TensorFlow*), SQL (*SQL Server, MySQL*), R (*dplyr, ggplot, Shiny*), JavaScript (*D3.js*)
Tools Jupyter, Tableau, Git, APIs, AWS (*EC2, S3, EMR*), Spark, Docker, Databricks, Streamlit, Power BI, BigQuery, Google Cloud, Azure