BRIAN TAM

Aspiring Data Scientist
Professional Engineer

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Education

Georgia Tech   Current
Masters in Analytics
Part-time

UC Berkeley
BS Civil & Enviromental
Engineer 2018
Systems Engineering Specialization

Skills

LANGUAGES
Python
SQL
Git
HTML/CSS
MatLab

LIBRARIES
Scikit-learn
NumPy
Pandas
spaCy
Keras
TensorFlow

VISUALIZATION
Tableau
Streamlit
Flask
GIS
D3
Plotly
Seaborn
CAD
matplotlib

MACHINE LEARNING
Regression
Classification
Clustering
Dimensionality Reduction
Neural Networks
Computer Vision (Image Classication, Object Detection)
Recommender Systems
Cross-Validation
Time Series / Forecasting

CLOUD COMPUTING
AWS
Google Cloud
Google Colab
DeepNote

Experience

METIS
San Francisco, CA
Data Scientist
Sept. 2020 to Dec. 2020
- Trained for ~14 hours per day as a Data Scientist, honing my abilities to communicate insights and to implement concrete solutions to abstract problems.
- Independently designed and executed 5 machine learning projects in regression, classification, unsupervised learning, NLP, and image processing.

LEA & BRAZE ENGINEERING
Dublin, CA
Design Engineer + Project Manager
Feb. 2018 to Apr. 2020
- Conserved $500,000+ in operational cost for clients through carefully engineering Earthwork design.
- Used ArcGIS to transfer geospatial data into CAD software for surface modeling.
- Analyzed geospatial coordinates to engineer topographic surfaces that follow professional standards and minimize cost.
- Coordinated with Project Managers, Project Consultants, municipalities, and other clients to prepare site grading and drainage plans, utility design, site layout and design, stormwater treatment design, hydrology calculations, drafting and research.
- Managed a team of engineers and trained incoming team members to design civil systems and become proficient in company CAD software, increasing productivity by +50%.

PROFESSIONAL ENGINEER LICENSE
Rigorous licensing process 80% completed:
- Proved proficiency in linear algebra, calculus, statistics, and the application of math to solve real-life scenarios.
- Gained 5 official references from senior engineers recommending my competency and professional judgment as an engineer.
- Passed two 4 hour state-certified exams that each had a passing rate of 60%.

SIMPSON GUMPERTZ & HEGER INC.
Walnut Creek, CA
Traffic Engineer Intern
Jan. 2018
- Designed 2 alignment alternatives for the Willits Bypass within project limits per design standards that minimized environmental impacts.

W.E.O'NEIL
San Diego, CA
Project Engineer Intern
May 2016 to Aug. 2017
- Supervised 300+ construction workers on the construction of 2 senior assisted living buildings, ensuring and increasing construction quality.
- Implemented Building Information Modeling (BIM) to navigate 3D models of the building design.

Data Science Projects

SMART CITIES (IMAGE CLASSIFICATION) [IN PROGRESS]
Tools: ArcGIS, CNNs, RNNs, Keras, TensorFlow, OpenCV, Google Cloud, Rhino, CAD, Grasshopper
- Leveraged my civil engineering background to train an image classification tool that takes in a satellite aerial image and identifies key objects, boundaries, and junction points (such as curb, gutter, sidewalk, driveway, and building boundary) and communicates with the CAD software to draft these said boundaries.
- Projected to automate 20% of a typical design engineer's workflow, which will revolutionize the civil engineering field and increase productivity.

MYERS BRIGGS NLP (CLASSIFIER)
Tools: HTML / CSS app development, spaCy preprocessing, extract features from NLP, NMF topic modeling, VADER sentiment, WordCloud visualizations
- Increased prediction accuracy from 6% to 50% by separately each letter of the Myers Briggs with 4 classification models (XGBoost, Naive Bayes, Random Forest, Logistic Regression).
- Programmed an interactive app using CSS that predicts people's Myers Briggs using through their writing style; the app surged on web popularity with 100+ participants.

RELIGIOUS TEXT NLP (UNSUPERVISED LEARNING)
Tools: Flask app, pyLDAvis and scattertext visualizations, Word2Vec / FastTrack word embeddings, VADER sentiment, LDA topic modeling
- Utilized topic modeling and sentiment analysis to uncover insights into the Bible's many books.
- Presented findings in a sermon in front of a live church with 200+ attendants.
- Utilized the spaCy library and regex for preprocessing.
- Published an interactive Flask app onto Heroku.

BOARD GAME SALES PREDICTOR (REGRESSION)
Tools: BeautifulSoup, Selenium, and API's for web scrapping. Ridge / lasso / polynomial / linear regression for modeling
- Predicted the retail volume of 120,000 board games on BoardGameGeek and achieved an R2 score of 0.74 by iteratively training and cross-validating a Linear Regression model with Lasso regularization using Scikit-learn.
- Deployed the model with an interactive Streamlit application.

KICKSTARTER SUCCESS (CLASSIFIER)
Tools: AWS cloud computing, pqSQL database, Logistic Regression, KNN, Random Forest, Naive Bayes, ML Pipeline, ROC-AUC
- Classified a Kickstarter campaign outcome, based on the campaign category, monetary goal, and duration, overcoming classification problems and class imbalance in order to aid creators in the funding of new ideas.
- Built a Streamlit app where backers and content creators can input their parameters and get an estimate of the campaign outcome.

OTHER PROJECTS & PAPERS
- Design of Cyber-Physical Systems - "Air Quality Optimization, and Arduino detector programming"
- Airport Design Project – "Dynamic Programming Optimization of Los Angeles Area Airport Delays"
- Mathematical Modeling - "Finite Element Calculation of Warping (Saint-Venant Torsion)"
- Programming and fabrication - S'more making Robot