Punya Swaroop Sirigiri

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Bloomberg Market Concepts Certified

Summary: Quantitative Analyst/Data Scientist with strong math background and 5+ years of experience using Machine Learning and Data Engineering to solve challenging business problems in Financial Services Industry

Achievements: Insurance Excellence Synergy Team Award (John Hancock) from **CEO**, Academic Excellence Scholarship (UCONN), Walmart Labs Hackathon Finalist (5-day Sponsored Event), **Kaggle - (Top 9%, 14%)**

Professional Experience:

Progressive Insurance (Cleveland, OH): **Feb 2020 - Present**

Senior Data Scientist/Quantitative Analyst – Pricing (Python, R, SQL, AWS, Bash, Jenkins, Docker, GIT)

- Built, refined, and enhanced **time series forecasting** models (ARIMA, Orbit, Prophet) to predict prospective frequency of automotive accidents and average cost to repair across 50 states, 2 distribution channels, and 10+ policy coverage segments (2000+ models) to inform rate-making decisions
- Collaborated on the development of an internally facing **web application** providing interactive tools for 100+ users to meaningfully build intuition about pricing R&D's models and consume output to drive business decisions
- Evangelized methods to refine Progressive's comprehensive weather pricing strategy to produce more stable and accurate pricing via the development of **predictive models (hail, hurricane)** leveraging meteorological data to quantify Progressive auto's long term weather risk
- Collaborated with senior managers in defining Progressive's rate-making response to changes in driving behavior and economic conditions due to COVID19 (lock-downs, supply chain disruptions, etc.) and surge in used car prices resulting in model enhancements yielding sustained growth, profitability, and an aligned response across various business units (pricing, claims, control, product, R&D)

John Hancock Financial Services (Boston, MA): **Feb 2018 – Jan 2020**

Data Scientist – Insurance and Global Wealth & Asset Management **(Python, SQL, Tableau)**

- Performed **NLP techniques** such as Sentiment Analysis, Entity Recognition and Topic Extraction to analyze customer feedback received through channels: call center transcripts, emails, or online reviews, there by extracting insights from customer interactions to identify recurring issues, detect emerging trends, and pinpoint areas for improvement.
- **Marketing Campaign Models:** Developed Logistic Regression to rank the potential customers based on likelihood to qualify for insurance, click on ads etc., for direct-to-consumer marketing campaigns using customer data, health related information and web analytics data, evaluated performance of models using data of 250 million people in USA

Machine Learning Projects:

Image Caption Generator (Sequence models)

- Developed an image captioning web application using CNN and LSTM using 8k images with 5 different captions each by extracting features from VGG16 pre-trained model. Evaluated the model performance using BLEU score.

Predicting Daily Adjusted Close Stock Prices (Python)

- Predicted Adjusted Close prices for the next 7 days for British Petroleum stock using adjusted, unadjusted OHLCV trade data of certain stocks in LSE, FTSE100 data by developing Linear, Support Vector Regression.

John Hancock NLP Competition - First Place (Spacy, Natural Language Processing, Regex)

- Identified Personally Identifiable Information (PII) from Email Corpus, News Articles and Wiki extracts using Regular Expressions, Caseless Name model and Case-sensitive model with 0.81 on the Competition's metric.

Education:

The University of Connecticut, Hartford, CT Dec 2017
Master of Science in Data Science (Business Analytics) **GPA: 3.80/4.00**
National Institute of Technology, Calicut May 2016
Bachelor of Technology in Engineering **GPA: 8.12/10.00**

Skills:

Machine Learning and Statistics: Linear, Ridge, Lasso, Logistic regression, Decision Trees, Random forest, SVM, Clustering, PCA, KNN, XGBoost, ARIMA, Prophet, Orbit, Hypothesis Testing, Bayesian Statistics

Programming Languages and Software: Python, R Programming, Bash, Jenkins, Docker, GIT, AWS S3, AWS EC2, SQL, Tableau, Hive, JavaScript, HTML, CSS, Regex, Excel

Deep Learning and NLP: TensorFlow, Keras, PyTorch, Spacy, OpenCV, Convolutional Neural Networks (CNN), Sequence Models (RNN, LSTM), Transformers, LLMs, Auto-Encoders, Word2Vec, N-grams, TF-IDF, SVD, NLTK