**Shardul Suryakant Rane**

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# EDUCATION

* **Master of Science in Data Science**  **GPA: 3.62/4.0**

University at Buffalo, State University of New York Aug 2019 - Feb 2021

*Relevant Coursework*: *Machine Learning, Statistics, Data Mining, Probability, Deep Learning, Data Intensive Computing, Data Modelling*

* **Bachelor of Engineering in Computer Engineering** **GPA: 7.52/10.0**

University of Mumbai Jun 2013 - May 2017

*Relevant Coursework*: *Artificial Intelligence, Software Engineering, Data Structures, Database Management, OS, Analysis of Algorithms*

# TECHNICAL SKILLS

* **Skills:** Predictive Models, Classification & Regression, Supervised & Unsupervised learning, Hypothesis Testing, EDA, Time-Series Modelling, Anomaly Detection, Marketing Analytics, Fintech Machine Learning
* **Programming:** Python, R, SQL, NoSQL, Java, JavaScript, Apache Spark, Hadoop, Docker, Flask, RESTful API, Google Cloud Console, AWS Lambda, Sagemaker, IBM SPSS, Qlik, Tableau, GitHub, Excel
* **Libraries:** Scikit-Learn, Scipy, Pandas, Pyfolio, Statsmodels, Keras, TensorFlow, Numpy, Matplotlib, dplyr, DAAG, R-Shiny, Dash

# ACADEMIC RESEARCH PROJECTS

**Fraud Detection Web-tool for Employees Travel Expenses Auditing**  [[**Link**](https://github.com/shardul0913/FraudDetectionConcur)]

* + Reduced Manual Fraud Analysis time by tracking incorrect expenses with SVM at 87% and predicted expenses with L2 Regression at 96% accuracy. To tackle data imbalance in univariate time series, implemented SMOTE for regression.

**Quantitative Stock Analysis to Examine Industry-wise Effect of ‘US China Trade’** [[**Link**](https://github.com/shardul0913/TradeWarAnalysis)]

* + Performed thorough research using Dynamic Time Warping, Hierarchical Clustering and Exploratory Data Analysis on stock returns for Electronics, Textile, Distribution services and Energy companies (Jan 2019 - Sep 2019).

**Strategical Arbitrage technique to predict Investment Returns using Unsupervised Bayesian Modelling**  [[**Link**](https://github.com/shardul0913/Fin-StatisticalArbitrage)]

* + Time series prediction using Gaussian Mixture Modelling and Expectation Maximization on investment returns.
  + Tackled non-stationarity and data distribution differences by citing 'Machine Learning in Asset Management' paper

**Classification Modelling with ‘Dublin Business School’ students to Predict Game Outcome**  [[**Link**](https://github.com/shardul0913/FootballAnalysis)]

* + Implemented Ensemble Learning with 78% Recall accuracy using XGBoost, Random Forest and Support Vector on multiclass datasetwithto predict soccer game result. Implemented Grid Search for Parameter Tuning for the models.

**Apache Spark Multi-label Natural Language Classifier to track Movie Genres**  [[**Link**](https://github.com/shardul0913/PysparkMultilable)]

* + Overcame the limitation of Multi-label classifier in Spark by implementing Logistic Regressors for each class
  + Improved accuracy of 71% by 13% with feature engineering by validating TFIDF, Word2Vec in Spark Mllib

# PROFESSIONAL EXPERIENCE

## **Data Scientist Intern, *Hewlett Packard (HP) – Boise, USA* Jun 2020 – Dec 2020**

**Developed Forecasting Tool for Printer Toner Usage in 10 markets** **and gained 93% Accuracy**

* Built Logarithmic Regression model with L2 Regularization to predict in-market printer usage to help PMs with feature selection in NPIs. Published R-Shiny model dashboard to service HP’s NA, EU and Asia regions. **Tools**: AWS Redshift, SQL, Qlik

**Investigated the Impact of Pandemic on Product Sale and Usage in 10 Markets Worldwide**

* + Presented Quantitative research report by performing Hypothesis Testing on Time-Series dataset with Granger Causality, Dickey-Fuller test to explain the relationship between impact of COVID-19 on personal and enterprise printing volume

**Traced Patterns in Counterfeit Product Reviews with 85% accuracy with NLP**

* Designed Bi-gram Topic Model and Sentiment Engine for Clone Product Usage. Intimated PMs by highlighting the topic wise keywords for positive/negative reviews. **Methods**: Sklearn, NLTK, Non-Negative Factorization, SVD, TF-IDF, Watson sentiment

## **Data Analyst, *Performics, Publicis Media******– Mumbai, India* Dec 2017 – Jun 2019**

**Engineered User Intent Machine Learning Model to Improve Display Targeting Revenue by 12% for Client**

* Developed predictive model with 84% accuracy, using Machine Learning and Google Cloud Platform. Tracked user purchase intent based on search term & demographics. **Methods**: Python, Random Forest Classification, KMeans Clustering, PCA

**Formalized Ecommerce Revenue Attribution Model to Reduce Task Time by 79%**

* + Updated Traditional First touch attribution model based on user session duration and conversion rules with an automated reporting dashboard in Google Analytics. **Tools :** Python, BigQuery, Rest API, Google Tag Manager, Google Analytics,

**Gained 14% user traffic for News Website by Introducing Content Data Acquisition Framework and Web Dashboard**

* + Tracked and analyzed micro features like article impressions, clicks with Python, JavaScript to consult client’s content strategy

**Boosted conversions by ~16% for 10+ Ecommerce and Finance Firms by Designing BI Framework**

* + Instituted analytics dashboard and deployed APIs for product performance, A/B tests results, and conversion funnel reports.

# ACHIEVEMENTS & LEADERSHIP

* **Certified**: Coursera Neural Networks, Apache PySpark, IBM SPSS, Tableau, Investment Management with Machine Learning
* Achieved AI Explorer badge at HP for print Usage Prediction model, Trainee for employees on Advanced Analytics at Performics