# VISHNU TEJA SARDEE

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## PROFESSIONAL SUMMARY

A highly motivated and detail-oriented professional with a strong interest in quantitative analysis in the finance industry. Possessing a solid foundation in mathematics, statistics, and programming that demonstrates exceptional proficiency in developing and implementing quantitative models to drive informed decision-making. A self-starter, effective communicator and a great team player ready to only give my best.

## EDUCATION

**Master of Science in Applied Mathematics and Statistics (Operations Research)**                          Aug 2021 – May 2023
Stony Brook University                                                                                          Stony Brook, NY
Courses Taken: Machine Learning, Probability and Statistics, Analysis of Algorithms, Stochastic Models, Simulation and Modelling.

**Bachelor of Technology in Electronics and Computer Engineering**                                          Aug 2015 - May 2019
Jawaharlal Nehru Technological University                                                                       Hyderabad, India
Courses Taken: Engineering Mathematics, Database Management and Systems, Web Technologies, Internet of Things, Big Data Analysis.

## WORK EXPERIENCE

**Research Assistant –Financial Modeling of Derivatives Pricing**                                            March 2023 – present
School of Business, Stony Brook University                                                                      Stony Brook, NY

- Utilized historical stock price returns to perform distribution fitting and estimate stock price movements. Developed models based on Geometric Brownian Motion (GBM) with constant volatility to simulate stock price behavior. Employed Monte Carlo simulation (MCS) techniques to calculate long-term average call option prices.
- Incorporated the Heston model to introduce stochastic volatility into stock prices, generating simulated stock prices and volatility for improved call option price calculations.
- Employed the Black Scholes (BS) formula with randomly generated parameters to price call options and trained an Artificial Neural Network (ANN) model to predict option prices. Utilized historical option prices to optimize volatility (sigma) and reduce root mean squared error (RMSE). Currently developing an ANN model based on the Heston model and MCS to enhance machine learning capabilities for option price prediction.

**Application Development Analyst- SAP Finance and Controlling**                                            Jun 2019 – Jul 2021
Accenture                                                                                                       Bangalore, India
- Successfully managed and maintained accurate financial/accounting records of a multinational corporation in SAP systems, overseeing the analysis and updates to cost center / profit center accounting tables, facilitating seamless coordination between actual and fiscal year planning of 10,000+ records which resulted in improved efficiency.
- Resolved IT service request tickets, adhering to service level agreement (SLA), which involved collaboration with cross-functional teams to execute processes well within the deadline.
- Monitored crucial systems, transactions and facilitated system transfers (quality to production) to ensure smooth business functioning under time constraint. Raised immediate alarms upon detection of certain failures, thus reducing any potential financial losses.

## TECHNICAL SKILLS

- Computer Programming: Python, R, MATLAB, MySQL, Java, C/C++, Bash / UNIX command line, SAP ABAP/HANA.
- Data Analysis / Machine Learning: Pandas, NumPy, R, GLM, Decision Trees, Neural Networks / RNN, SVM, PCA.
- Industry Tools: PowerBI, Tableau, MS Excel, Linux, Git, Bitbucket, Jupyter Notebook.

## PROJECTS

**Data Analysis of Healthcare Survey Results:**                                                             April 2023 – May 2023
- Analyzed mental health survey results of SBU graduate students to understand their help seeking behavior and support needed during the COVID-19 pandemic as part of a research study in the School of Public Health and Social Welfare.
- Performed comprehensive data cleaning and exploratory analysis on a dataset of 1000+ records using R programming language.
- Developed ML models for variable selection/principal component analysis and logistic regression to determine correlation between various healthcare factors asked in the survey.

**Bank Loan Classification using Machine Learning:**                                                        April 2023 – May 2023
- Utilized machine learning algorithms to accurately classify bank loans (approved/rejected) based on a comprehensive dataset obtained from Kaggle.
- Developed Decision Tree / Random Forrest, Support Vector Machine (SVM) and Neural Network models.
- Optimized best parameters using cross-validation to improve predictions accuracy, achieving 80-94% accuracy or precision across all models.