Shashwata Mondal

Risk Consultant/Actuary
+919064520946 -
shashwata.katwa@gmail.com - linkedin.com/in/shashwata-mondal
github.com/Shashwata77

INTRODUCTION

M.Tech graduate from ISI Kolkata with a strong foundation in analytical skills and a deep motivation and passion towards data science and quantitative finance. I am currently pursuing actuarial exams, aiming to achieve qualifications equivalent to CFA and FRM certifications. My academic background and career aspirations reflect a commitment to mastering complex financial models, risk assessment, and data-driven decision-making in quantitative finance domain.

EDUCATION

Indian Statistical Institute, Kolkata — **Kolkata, West Bengal, India**
M.Tech in Cryptology and Security, Percentage : 78.5 — *Oct 2021 - July 2023*

Ramakrishna Mission Vivekananda Educational and Research Institute — **Belur Math, West Bengal, India**
M.Sc in Mathematics, CGPA : 7.71 — *July 2018 - June 2020*

Ramakrishna Mission Residential College, Narendrapur — **Kolkata, West Bengal, India**
B.Sc in Mathematics, Percentage : 75.8 — *July 2015 - June 2018*

PROFESSIONAL QUALIFICATION

Institutes Of Actuaries of India
Student Member — *May 2024 - present*

Cleared Entrance test with a score of 74%.

Appearing for CS1 (Actuarial Statistics) and CB2 (Business Economics).

TECHNICAL SKILLS

Programming Languages: R, Python, SQL, C
Libraries and Tools: Sklearn, Pandas, Numpy, Git, MS Excel, MS Word, PowerBI, Powerpoint
Subjective Skills: Statistics, Machine Learning, Deep Learning, NLP
Languages: English, Bengali, Hindi

WORK EXPERIENCE

Chief Manager - Actuary
TATA AIG, Mumbai, Maharashtra, India — *July 2024 - present*

Predictive modelling in insurance of commercial lines of business (Fire and Marine)

- This project aims to predict the **Loss Ratio** associated with the business portfolio.
- Implemented various data pre-processing techniques like outlier handling, missing value imputation to ensure the completeness of the data and applied data transformation methods to prepare the dataset for modeling, such as feature scaling or encoding categorical variables.
- Selected XGBoost as both classification model and regression model. In classification part, the model identify whether a policy will generate claim or not and in the regression part it will predict the amount,leveraging its ability to handle complex relationships and nonlinear patterns within the insurance data.Configured and tuned hyperparameters to optimize the model's performance in predicting loss ratios for the business portfolio.
- Applied K-Fold Cross-Validation to validate the XGBoost model's performance across different subsets of the insurance dataset.Analyzed the results of the XGBoost model, considering performance metrics (e.g. Confusion Matrix, TPR, R-squared, Adjusted R-squared) and insights gained from back testing and cross-validation.

Actuarial Analyst
TATA AIG, Mumbai, Maharashtra, India — *July 2023 - June 2024*

Computing Value at Risk (VaR) in Market Risk

- Collected and organized historical data, including the initial capital, market values, and daily changes in market values, over the specified time period.
- Computed the daily rate of change in market values by analyzing the difference between consecutive days, providing insights into the volatility of the market.Updated the initial capital value at each time step to reflect the evolving market conditions.

- Simulated the distribution of the rate of change over a certain time period, computing the mean and standard deviation to characterize the distribution.
- Calculated the Value at Risk (VaR) by applying the identified percentile to the initial capital, providing an estimate of the potential loss within a specified confidence interval.Interpreted the VaR results in the context of market risk management, conveying the potential downside risk associated with the given initial capital and time horizon.

Marine insurance portfolio monitoring

- Identified and mapped relevant features in the raw data related to marine insurance, considering factors such as PSL, sum insured, commodities and historical claims data.Developed a structured approach to categorize and organize the features for effective analysis.
- Utilized the company-built calculator to compute the expected premium based on the mapped features.Conducted a thorough analysis by comparing the expected premium rates with the actual rates obtained from the portfolio data.
- Implemented a system to calculate month-on-month zonal rates, considering geographical zones relevant to marine insurance.Monitored the rate of change in zonal rates, identifying patterns and trends that could impact pricing strategies.

Credit Risk analyst intern

Morgan Stanley, Mumbai, Maharashtra, India *Jan 2023 - July 2023*

Computing Expected Loss

- Performed various type of data pre-processing techniques in the raw data. Then perform different types of feature selection methods to extract the relevant features
- Applied different models like Logistic regression for PD (Probability of Default) modelling and Linear Regression for LGD (Loss Given Default) modelling.
- Computed Expected Loss with the the help of the computed PD, LGD and a fixed EAD which was fixed against business portfolio.

PROJECTS

- **Building a Content Based Movie Recommender System:** Objective of this Project is to build a content based Movie Recommender System.Based on the content of the movie, this system will suggest similar other movies. Used Datasets : tmdb 5000 movies,tmdb 5000 credits. Used language and libraries: Python and nltk library
- **Moview review analysis using various classification methods:**, This Project intends to compare the accuracies of all possible methods of word embedding and classification such as ”bag of words+random foresst classifier”, ”word2vec+SVM”.
- **Loan Approval Prediction:**, This Project aims to derive a solution to the classification problem in which we need to classify whether the loan will be approved or not with the help of a Machine Learning Model using various classification algorithms like Logistic Regression, Decision Tree Classifier and Random Forest Classifier

CERTIFICATION

- Data Science and Machine Learning Bootcamp with R (Udemy)
- The Complete Financial Analyst course (Udemy)
- Data Science: Modern Deep learning in Python (Udemy)
- The Business intelligence analyst course (Udemy)
- Member of Institutes Of Actuaries of India (Appearing for Actuarial statistics and Business Economics paper)

ACHIEVEMENTS

- Qualified JAM Mathematics 2018
- Qualified GATE Mathematics 2020
- AIR 11 in ISI M.Tech Entrance
- INSPIRE-DST Fellow 2015-2020

EXTRACURRICULAR ACTIVITIES

- **Placement Representative** at ISI ,Kolkata From M.Tech CrS Batch. - Oct 2021 - July 2023
- **Event Organizer** in RKMVERI - August 2018 - June 2020