

Harshita Bairwa

Dolat Capital | Quantitative Analyst

Email : harshitabairwa99@gmail.com

Phone : +91-7568707337 || **Linkedin:** HarshitaBairwa

Academic Qualifications

Year	Degree/Certificate	Institute	Performance
2023	M.Sc. Statistics	Indian Institute of Technology, Kanpur	7.0/10
2020	B.Sc. (Hons) Statistics	Ramjas College ,University of Delhi	8.87/10
2017	CBSE(XII)	Zinc Vidyalaya	87%
2015	CBSE(X)	Zinc Vidyalaya	9.6/10

Professional Experience

- **Dolat Capital | Quantitative Analyst** (July'23 - Present)
 - Extracted the historical trade data of **Nifty50 index/USD-INR currency pair** from firm specific portal.
 - Performed outlier treatment by using **Winsorization**, data transformation using **Robust Scaling** and **Z-score Scaling by EMA**.
 - Conducted **Correlation analysis** of exploratory variables (trade indicators) to initially reduce the features over categorizations of time data (under granularity of 50 μ s to 10sec) and tick data.
 - Feature selection using **Forward Selection** and **Elastic-net regularization**, implemented VIF method to mitigate multicollinearity.
 - Built **Linear, Quantile** and **Ridge regression** and achieved **Directional Accuracy 72.3%** and R^2 **13%** with Linear regression.
 - Tested the strategy in Simulated trading environments, finely tuning hyperparameters to optimize performance metrics such as **Sharpe-ratio, profit per trade (ppt), drawdown, and win-loss ratio**.
 - Conducted **Live Trading** on NSE servers, and performed detailed Post-trade analysis for Live-Simulation mismatch.

Projects

- **Bank Marketing Analysis** (Mar-Apr'22)
 - Handled missing values in the data using **Mode** and **Random Sample imputation**, applied **One-Hot encoding**.
 - Checked for outlying points and solved **Multicollinearity** problem using **VIF**.
 - Dealt with class imbalance using **SMOTE** and performed **Stepwise Variable Selection** to select the best subset of features.
 - Built ML models i.e. Logistic regression and **Decision Tree** classification and achieved improved accuracy of **86.8%** in Decision Tree.
- **Time Series Analysis and Forecasting of Bitcoin Price** (May-July'22)
 - Data pre-processing like missing value imputation, checked for Trend and eliminating it by **Differencing method**.
 - Checked for Seasonality by using **Friedman's test**, stationarity by **ADF test** and autocorrelation using **ACF** and **PACF** plots.
 - Estimated the components of time series and built suitable model for forecasting future prices.
- **Credit Risk Analysis using ML algorithm** (Aug-Oct'22)
 - Performed Exploratory Data Analysis,Data Preprocessing, Feature Creation by **Weight of Evidence**.
 - Performed outlier detection by using box plots and handled them by **IQR capping**.
 - Feature selection by **Forward selection, Lasso Regularization, Feature Importance Score** by Random forest and Catboost.
 - Performed **VIF Method** to reduce **Multicollinearity** among the selected features.
 - Chose the Model after **Hyperparameter Tuning** and **Bias Variance Trade off**.

Relevant Skills

- **Programming Languages:** Python, SQL.
- **ML Libraries:** Pandas, Numpy, Matplotlib, Sklearn.
- **Software Skills:** MS Excel, MS Power Point, SPSS, LaTeX.
- **Soft Skills:** Analytical Thinking, Problem Solving, Adaptability, Communication Skills, Interpersonal Skills, Leadership.

Relevant Courses

Regression Analysis	Financial Statistics	Statistical Simulation and Data Analysis
Design of Experiment	Time Series Analysis	Statistical and AI Techniques in DM

Scholastic Achievements

- Secured **10 SGPA** in the Department during 6th semester of graduation.
- Awarded **Certificate of Appreciation** for securing grades in Class X by Sub Divisional Officer.

Leadership / Extra-Curricular

- **Chairperson (Ramjas College Girls Hostel)** (2019-20)
 - Nodal student representative of Girls Hostel.
 - Member of Hostel committee in managing hostel affairs.
- Coordinator in STATISTICA '18 and '19, the annual fest organized by the Department of Statistics, Ramjas college.
- Represented school at State Level Inter School Science Fest collaborated with Department of Science and Technology (DST), GOI.
- Represented school at National level Inter School Debate Competition.
- Four-year senior diploma in Classical Guitar.