AARUSHI JOHLY

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SUMMARY

Trained as a mathematician from **Miranda House**, University of Delhi. I am looking to apply my **extensive analytical and technical skills** to solve business problems. Acquires advanced-level knowledge of **Pure Mathematics, Machine Learning and Deep Learning**.

PROJECTS

Predicting Option prices using Deep Learning Networks

  i. Calculated the option price for various combinations of risk-free rate, volatility and strike prices under the **Black-Scholes model assumptions**.
  ii. Predicted option prices using Deep Learning network with a root mean square error of 2 cents per dollar of strike price.

Nasa predictive maintenance (RUL) using Machine Learning
Aim: To provide framework for predicting the aircraft's remaining useful life (RUL).

  i. Implemented k-fold cross validation to models (SVR, Random Forest, Linear regression).
  ii. Difference in RMSE applied that SVR performs better that the other models.

Predicting Heart Attacks Using Machine Learning

  i. Applied the **method of estimation** using Bayesian Priors to evaluate the risk with respect to age and gender.
  ii. Implemented models and Logistic Regression resulted in the best performance with score of 0.71.

SKILLS

Machine Learning: Decision Trees, Random Forest, SVM, Regression Analysis, Naïve Bayes, K-means clustering, Hierarchical clustering, DBSCAN, Apriori algorithm

Deep Learning: Recurrent Neural Networks, Convolutional Neural Network

Tools and Technologies: Python, NumPy, Pandas, Scikit-Learn, TensorFlow, Matplotlib, SQL, Tableau, Git, Microsoft Excel, HTML, CSS

Statistics: Methods of estimation, Hypothesis testing, Likelihood Ratio tests, Discrete and Continuous time Markov chains.

EDUCATION

Year	Degree	Institute
2019-2021	M.Sc. Mathematics (MMATH)	Miranda House, University of Delhi
2014-2017	B.Sc.(H) Mathematics	JDMC, University of Delhi
2014	AISCE (Class XII)	Mount Carmel School, Dwarka, Delhi

- Scored **All India Rank 39** in Entrance exam for Masters in Mathematics of University of Delhi.
- Miranda House holds NIRF **All India Rank 1** for past 7 years. Link
- Relevant Subjects Studies:
    i. **SUPPORT VECTOR MACHINES**
    ii. **OPTIMIZATION THEORY**: Gradient descent, Steepest gradient descent, Stochastic Gradient Descent.
    iii. Probability and Statistics
    iv. Linear Algebra
    v. Calculus

POSITIONS OF RESPONSIBILITY

General Secretary of Department of Mathematics, JDMC.

- Organized departments fest and anchored departments farewell.
- Organized a workshop on actuarial Sciences.

To know more details, kindly visit the link.