

Shivam Vats

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EDUCATION

University of Colorado Boulder

Aug 2022 – May 2024

Masters in Data Science

Relevant Coursework: Statistical Methods and Applications, Data mining, Machine Learning

University School of Information, Communication and Technology, New Delhi

Aug 2016 – May 2020

Bachelor of Technology in Computer Science

GPA - 8.27

SKILLS

- **Programming Languages:** Python, R, R-Markdown, SQL(MySQL, Postgres), NodeJs, ReactJs, Mongo, HTML, CSS
- **Data Analysis:** Pandas, Numpy, Scikit-learn, Keras, Plotly, Seaborn, Tableau, GeoPandas, Selenium, Flask, Spark, GCP
- **Certifications:** Deeplearning.AI, AWS Solutions Architect Associate, Data Science and Machine learning in Python

PROFESSIONAL EXPERIENCE

Amazon Web Services, Hyderabad, India

Software Development Engineer – 1

Jul 2020 – Aug 2022

- Designed and developed React-Redux application for customer support engineers reducing the average time taken to debug an AWS Organizations ticket by 18%.
- Built an NLP regression model to score customer's sentiment on a scale from 0 to 100 using the data from support tickets. Leveraged NLTK and naive-bayes packages in python and improved the accuracy to 75% utilizing TF-IDF.
- Assisted 200+ customers in real-time via calls and chats to debug security and monitoring components of cloud applications. Solved 700+ tickets on services like Amazon Cognito, S3, IAM, EC2 and performed 90+ quality reviews of problem solving.

Software Development Intern

Feb 2020 – Jul 2020

- Automated the monitoring of authentication events of Cognito users facilitating security compliance and disaster management.
- Used agile development along with services such as AWS Lambda, CloudFormation and CloudWatch to build the back end.

Marsplay, New Delhi, India

May 2019 – Jul 2019

Full Stack Web Developer Intern

- Built search engine optimization scripts in NodeJS that increased weekly average number of visits to website by 10%.
- Tackled unauthorized access to the website by devising a mechanism that automatically blacklist unused JSON Web Tokens.

PROJECT AND RESEARCH EXPERIENCES

Song Recommender System [\[link\]](#)

Aug 2022 – Present

- Engineered data pipeline with Spotify Web API to gather songs data. Modelled it in PostgreSQL and performed EDA.
- Implemented PCA to facilitate Kmeans, KMedoids clustering and used content-based filtering to generate recommendations.
- Scaled using distributed computing via Spark on GCP. Deployed the flask application using docker and hosted it on EC2.

Furnace Maintenance Prediction [\[link\]](#)

Jan 2022 – Present

- Programmed time series classification model to predict when an aluminium furnace requires maintenance with 93% accuracy using supervised learning with time-based cross-validation.
- Checked data stationarity and engineered time-lag features by determining the period of input data signals using plotly. Performed time-based clustering for feature reduction of quantitative features and chi-squared test for qualitative features.

Its Ronaldo [\[link\]](#)

Aug 2020 – Dec 2020

- Performed data analysis and machine learning on game statistics of Cristiano Ronaldo. Cleaned, analyzed, and visualized data using Numpy, Pandas, Matplotlib, and Seaborn. Conducted PCA along with multivariate analysis for feature selection.
- Implemented logistic regression, SVM, random forests, and KNN using scikit-learn to classify if a shot is converted to a goal.
- Architected deep neural network leveraging Keras and performed hyper-parameter tuning. Applied the concept of cyclical learning rates to improve the accuracy of classification by 10%.

Research Assistant - Leeds School of Business [\[link\]](#)

Jan 2022 – Present

- Discovering similar courses using semantic analysis of course descriptions, helping the administration uncover connections across departments. Leveraged BERT to compute sentence embeddings that is used to calculate cosine similarity between the courses. Visualized relationships among courses using network graphs via plotly.

ACHIEVEMENTS

Winner – Smart India Hackathon

Mar 2019

Led a team of six persons to curate an application that reduces exploitation faced by farmers due to middlemen. Developed mobile and web application with ReactJs and NodeJs to sell produce online, book crop storage facilities, and logistics services.