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Bengaluru, India

Aayush Sacheti

AI Research Scientist

SUMMARY

Experienced **AI Researcher** currently working with **American Express** (AI Labs) with prior hands-on experience in Machine Learning, Artificial Intelligence, Deep Learning, and Data Analytics.

PROFESSIONAL EXPERIENCE

American Express (AI Labs) | AI Researcher | Bengaluru

Aug '21 - Present

At American Express AI Labs I am involved in building new products which use Advance NLP Techniques and Deep Learning Models that enhance the capabilities and efficiencies of various internal teams within the organization. Along with this, I am also involved in AI Research and applications

Complaints Insights

Working on building a Complaints Insights Portal that various teams use in order to quickly analyze and resolve customer issues

- Extracted relevant phrases from complaint text using **Keyphrase** Vectorizer over a **KeyBERT** model based on different POS Tags
- Performed Phrase Clustering using **BERT** embeddings to get a hierarchical view of complaints containing a mixture of topics
- Designed and Incorporated the functionality of splitting and merging clusters based on the coherent information attributes
- Build the dynamic functionality to **boost** and suppress specific words or phrases depending on the internal team requirements
- Provided intelligence for **Out Of Pattern Discovery** (OOPD) using an **XGBoost** model trained dynamically over sub-categories
- Built a text cleansing module to pre-process noisy ccp text using Multiword Resolution, **Concept Merging**, Spell Check, etc
- Created a **Topic Modelling** segment of the portal using TomotoPy's LDA and HLDA, and Dynamic Topic Discovery using DTM

INTERNSHIPS

CRED | Product Analyst | Bengaluru

Mar '21 - Jul '21

Optimize the risk management of a newly launched P2P segment CRED Mint, set indicator level alerts and devise a disbursal algorithm

- Created a **Stochastic Model** from the probability distributions to simulate the worst-case scenarios and prepare a risk charter
- Developed indicator alerts on risk thresholds. Devised disbursal algo, managed capital buffer, and performed sensitivity analysis

iRage Capital | Quantitative Researcher | Mumbai

Dec '19 - Jan '20

Devised a trading strategy in order to capture the state of self and cross-exciting triggering events under market order dynamics for Limit Order Book

- Modeled the mid-price movement probabilities using a multivariate **Hawkes Process** on instantaneous TBT queue size data
- The model used MLE deploying **Monte Carlo** Simulations and incorporated time decaying trailing stop loss with slippage cost

MoneyMatch | Deep Learning Analyst | Kuala Lumpur, Malaysia

May '19 - Jul '19

Predict forex demand of various currencies to feed inventory optimization models in order to reduce cost and build a sustainable buffer

- Trained **LSTM & VAR** demand prediction models using customer history & market volatility across currencies with **74%** accuracy
- Devised inventory optimization partner pre-funding model deploying **GA** and **simulated annealing** reducing the cost by **6.92%**

Indiana University | Machine Learning | Bloomington, USA

Jun '18 - Jul '18

Cluster datasets & test a new class of distance metric in K-means Clustering with different convergence criteria under various scenarios

- Clustered **51** high dimensional data across **6** distance measures deploying min mean, systematic search, grid & **sub-gradients**
- Incorporated new distance to ontology (**directed acyclic graphs** probability distribution) to cluster protein sequence molecules

KEY SKILLS

• **Programming Languages:** Python, R, C++;

Software: MATLAB, ProM, Disco, CPLEX, Ampl, Apache Spark, Stata, Tableau

ACHIEVEMENTS AND EXTRA CURRICULAR ACTIVITIES

- Awarded the **SVP Q1'22 Award** for being a consistent top performer at Amex for my contributions to the Complaints Insights Portal
- Holder of National Talent Search Examination (**NTSE**), State Science Talent Search Exam (**SSTSE**), and Merit-Cum-Means (**MCM**)
- Member of the **Gold & Bronze** winning Data Analytics Challenge, General Championship IIT Kharagpur 2018 & 2019 respectively
- Grabbed All India Rank **1** in International Olympiad of **Science**, International Rank **28** in International **Mathematics Olympiad**

EDUCATION

Integrated Masters in Economics

Jun '16 - Apr '21

Indian Institute of Technology, Kharagpur

CGPA: 8.34

Micro-specialization in Optimization Research and Applications

- **Founder - Quant Club:** Founded a club of Quant enthusiasts to widen the knowledge on mathematical finance and stock market
- **Captain - Data Analytics,** Azad Hall: Mentored 30+ students to compete and brainstorm in various Data Analytics Competitions
- **Sub-Head - Business Club:** Presented knowledge meetings on Data Analytics & Finance. Conducted various open house sessions