PAWAN MOOLRAJANI
Machine Learning Professional
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EDUCATION

Advance Program in Data Science
IIM Calcutta, India

MSc - Business Analytics
BITS Pilani, India
(9.7CGPA)

B.Tech
SKIT, Jaipur
Rajasthan, India

12th
CBSE, Jaipuria Vidyalaya
Rajasthan, India

SKILLS

- **Statistics:** Descriptive Stats, Hypothesis Testing (Z, T, F, CHI sq), Regressions (LINEAR, MULTIPLE LINEAR, LOGISTIC)
- **Data Mining:** Associative (Apriori), Classification (Decision Tree (CART, ID3, C4.5), SVM, KNN, Naive Bayes), CLUSTER (Kmeans, Dbscan)
- **Deep Learning:** CNN, RNN, GAN, Autoencoders
- **Dimension Reduction:** PCA, LDA, GDA
- **Regularization:** Ridge, Lasso
- **Ensemble:** Bagging (Random Forest), Boosting (AdaBoost and Gradient Boost)
- **Time Series Analysis:** ARIMA, ARIMAX, SARIMAX
- **Deep Learning Frameworks:** TensorFlow, MxNet, Keras, Pytorch and Theano
- **NLP:** NLTK, OpenNLP, Spacy
- **LLM:** Transformers, BERT, Langchain, Fine-Tuning LLM
- **BigDATA Tech:** Hadoop, Sqoop, Hive, Spark, SnowFlake, Bigquery
- **Other Daily Use Tech:** Jira, GIT, Docker
- **Visualization:** Tableau, ReactJS, AGGrid
- **Programming Languages:** Python, Scala and SQL
- **Data Engineering:** Airflow and Prefect Data Pipelines

EXECUTIVE SYNOPSIS

- Accomplished Machine Learning professional with total 11+ years experience out of which 8+ years in designing and implementing innovative solutions to real-world challenges while focusing on continuous learning and leveraging emerging technologies to drive impactful outcomes.
- Demonstrable experience in developing cutting-edge algorithms and models, building scalable and robust predictive models for impactful solutions in various industries, in aligning technology strategies with organizational objectives, backed by expertise in exploratory data analysis.
- Proficient in leveraging Azure Cognitive Services and Azure Machine Learning to develop cutting-edge solutions, led full-cycle development and deployment of machine learning models, optimizing for efficiency and scalability, implemented robust protocols for model monitoring and maintenance, ensuring uninterrupted performance enhancement.
- Successfully streamlined data pipelines, achieving a 30% reduction in data processing time during tenure at BLK, collaborated closely with multidisciplinary teams to align machine learning initiatives with business objectives, with a focus on data aggregation and reduction techniques for high-performance projects.
- Dedicated to staying updated on the latest advancements in machine learning and artificial intelligence, conducting comprehensive research to integrate emerging technologies effectively.
- Demonstrated ability to excel both as an individual contributor and as a team leader, leading a team of 3-4 members for the past 3 years.

EXPERIENCE

ORGANIZATION: Blackrock   **Jul 2022 - Present**
Senior Data Scientist (VP), Liquidity Research (ML Engineer /Researcher)

- Implemented Data pipelines for Fixed Income Projects, employing Apache Airflow and Azure Data Factory.
- Formulated Volume and Transaction Cost Forecast Model using Random Forest and WLS Regression for precise predictions.
- Elevated model performance by integrating thematic sentiments through LLM and Bloomberg data sources.
- Performed Data Analytics on TRACE, TRAX, AXES, CPP, ICE, Tradeweb, and Reuters Data.
- Integrated financial Models with LLM to enhance XAI and communicate methodology.
- Applied Conformal approach to all Fixed Income Models.
- Engineered comprehensive Model Surveillance framework (Python Flask-based) for screening diverse models and distributing reports to clients.
- Established robust Quality Control (QC) Framework using TensorFlow Data Validation for thorough data checks.
- Generated Market Stress Indicator using Isolation Forest to assist trading teams.
- Developed Application Programming Interface (API) for fixed income chatbot leveraging BloombergGPT and vendor sources for bond traders and external clients.

ORGANIZATION: Morgan Stanley   **Aug 2021 - Jun 2022**
Senior Manager – Developer (ML Engineer)

- Implemented robust data pipeline and devised Anomaly Detection system with Autoencoders for enhanced data quality and outlier identification.
- Addressed Data Engineering challenges by optimizing code, leveraging Dask and Spark, resulting in 40% efficiency improvement.
- Managed day-to-day tasks for Trading Algo App (High-Frequency Trading App Platform) using

- **Probabilistic Pramming Techniques:** Pyro, Stan, PyMC3
- **MLOps:** MLflow, Kubeflow and Docker
- **Cloud:** GCP, Azure and Databricks
- **Python Frameworks:** Django and Flask

- Led successful migration of Equity Data from KDB to Snowflake, ensuring smooth transition and improved data management.
- Developed Chat BOT based on BERT, RASA, and Symphony to address equity data trade queries.

ORGANIZATION: J.P Morgan Chase   Jul 2017 - Jul 2021
Associate VP – Developer (ML Engineer)

- Led Python Athena development for CAPITAL DESKTOP, ensuring regulatory compliance for capital adequacy ratio calculation.
- Engineered sustainable solutions for Risk-Weighted Assets (RWA) and Capital Adequacy Ratio (CAR) reporting in Capital Tech, utilizing ReactJS, Ag-GRID, and Python (Athena).
- Pioneered RWA/CAR Prediction System with Polynomial Regression Model for enhanced forecasting and risk management.
- Innovated Business User Commentary Prediction System using RNN, improving insights on Variance Reports.
- Established Application UI testing framework with Python Selenium and PhantomJS for critical application robustness.
- Orchestrated Tech Refresh Projects for Regulatory Repository and Reporting (RCUBE), enhancing system performance with updated technologies.
- Designed and developed chatbot with RASA, Symphony, and BERT to enhance user interaction and information retrieval for Capital Desktop.

ACHIEVEMENTS:
- Hall of Fame by MD in year 2018 for Automations Deliverables.

ORGANIZATION: BlackRock, India   Jun 2015 - Jul 2017
Analyst - DEVOPS / Developer

- Engaged into development and maintenance of Atlassian Plugins.
- Administration and maintenance of all Developer Support tools.
- Involved into Development of SRPT, which was used as Release tool within Blackrock environment.

ORGANIZATION: FIL INDIA (Gurugram), India   Mar 2014 - Jun 2015
Junior Analyst (Data Engineer)

- Established and managed a Big Data Ecosystem utilizing Hadoop, MapReduce, SQL, and Hive for efficient data processing and analytics.
- Ensured Fidelity Data integrity through tailored Data Consumption pipelines for each team's unique requirements.
- Led data migration from Relational Database Management Systems (RDMS) to Hadoop HDFS.
- Facilitated development processes by onboarding various components on Team City and UD.
- Prepared builds for diverse components (Java, CPP, Dot net, Unix, Informatica, Vermilion, UNIX, DB - Sybase and Oracle, Biztalk, CTRL_M, OBIEE) extending support through production.
- Implemented RESTful APIs to expose machine learning predictions, promoting AI adoption across business lines, and delivered intuitive Tableau dashboards for data visualization.

ACHIEVEMENTS:
- Director's award for on boarding and delivering the third-party Project efficiently and quickly till PROD.
- Certificates of acknowledgement from Senior Management for dedication towards work.

ORGANIZATION: Tata Consultancy Services Limited (TCS), Mumbai, India
System Engineer   Oct 2011 – Mar 2014

ACHIEVEMENTS:
- Awarded as a 'Best Team' consecutively twice.
- Two times awarded by 'On the spot award' for best performance in team.
- Achieved 98.27% CSI (Customer Satisfaction Index).
- Got 4 rating (out of 5) in training as well as in final anniversary.

REFERENCE
Available on Request