PARAMPREET SINGH

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https://github.com/jarvis-47 | https://jarvis-47.github.io/jarvis47.github.io/

EDUCATION

Clemson University   **South Carolina, United States**
Master's in Computer Science, CGPA – 3.85/4.0   *Aug 2022 – present*
Highlighted Coursework: Statistics, Data Mining, Data Analytics, Artificial Intelligence, Applied Data Science, Advance Machine Learning, Deep Learning for Computer Vision, Database Management Systems

Punjab Engineering College (Deemed to be University)   **Chandigarh, India**
B.Tech, Mechanical Engineering, CGPA – 8.2/10   *Aug 2016 – June 2020*
Secured A+ for capstone project 'Multi-Sensor Fusion for Adaptive Cruise Control and Lane Keep Assist on RC Car.'

PROFESSIONAL EXPERIENCE

Department of Materials Science and Engineering, Clemson University   **South Carolina, United States**
Data Scientist   *May 2024 – Present*
- Implemented Crystal-Graph CNN, a PyTorch based Graph Neural Network framework, achieving original study's accuracy, and adapted it to custom departmental datasets, significantly improving predictive performance.
- Utilized ML models to analyze atomic-level contributions, facilitating the design of new materials and optimizing experimental research by reducing search space by a factor of 7.

Clemson University, CUICAR Campus   **South Carolina, United States**
IT Consultant (Graduate Assistantship)   *Oct 2022 – April 2024*
- Collaborated in deploying an IT asset management database, including data population in Microsoft Access, migration to Azure SQL Database and developing a front-end interface in Access for **secure cloud-based data management**.
- Successfully maintained **90% one-week closure rate** while handling IT trouble tickets for a customer base of 500 users.
- Led the development of streamlined IT asset inventory procedures, **boosting efficiency by 50%** in asset data collection, device imaging, periodic asset tracking and distribution.

Maruti Suzuki India Ltd   **Gurugram, India**
Assistant Manager, R&D Vertical   *July 2020 – July 2022*
- Performed sales trend analysis to drive business strategies for a **130MM project** by analyzing IHS and IQS data reports.
- Proposed **0.5%** projected improvement in market share by conducting new model market research in 5 diverse regions.
Highlighted Project: Team Lead, Second-Hand Car Value Prediction Model
- Evaluated regression, random forest, and ensemble methods post-EDA & feature engineering, achieving 90%+ R2 score with XGBoost.
- Delivered easy and efficient handling of API requests by deploying the trained model to production on Amazon AWS EC2 instance, utilizing TensorFlow, an Ubuntu server, Nginx web server configured as a reverse proxy, and Python Flask server.

Mahindra Research Valley   **Chennai, India**
Research Internship   *Jan 2019 – May 2019*
- Attained a **92% R2 score**, forecasting rear axle power loss split, using predictive analytics & mathematical modeling in MS Excel.
- Achieved a **3% increase** in fuel efficiency by proposing significant design improvements, derived from research results. [SAE]

PROJECTS

- Developed and optimized a movie recommendation system using Matrix Factorization and Collaborative Filtering on the Netflix Dataset, achieving a **7% improvement in RMSE**. [>]
- Developed a CNN using PyTorch for CIFAR-10 image classification, incorporating techniques like, ReLU Activation, max pooling, batch normalization, Kaiming Initialization, and VGGNet-inspired architectures, **boosting accuracy by 40%** over plain Conv-Net . [>]
- Implemented an image captioning model on the COCO Captions dataset, achieving a **60% reduction in temporal SoftMax loss** with the Attention-LSTM model over vanilla RNNs. [>]
- Utilized spectral clustering to enhancing segmentation accuracy through optimal eigenvalue analysis and affinity matrix construction, significantly outperforming traditional K-means in identifying intricate cluster patterns. [>]

SKILLS

- **Tools & Technologies**: Apache Spark, Hadoop, Database (MySQL) MS Office (Excel), Git (Version Control), MATLAB, Tableau, SQL, Python (TensorFlow, Keras, PyTorch, Scikit-Learn, pandas, numpy, matplotlib, seaborn, plotty), R (RStudio), SAS, C, C++
- **Modelling:** Regression, Classification(SVM, Logistic), Clustering, Ensemble Methods(XGBoost, Adaboost), Neural Networks, Decision Trees, PCA, SVD, NLP, Time Series Forecasting, A/B Testing, Experimental Design, Exploratory Data Analysis, Data Warehousing
- **Soft Skills:** Client Communication Skills, Business Intelligence, Thought Leadership, Cross-Functional Team Collaboration, Innovation

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CERTIFICATIONS

- **AWS Machine Learning Specialty (Cloud Computing):**
- Tools: S3, Redshift, Kinesis, Glue ETL, Athena, Quicksight, Sagemaker(Studio, Autopilot), Lambda, Comprehend, Lex, Polly, Personalize
- **Udemy Power BI Desktop for Business Intelligence (Data Visualization):**
- AdventureWorks Sales Analysis Dashboard – ETL, relational model, DAX calculated fields, and interactive data visualization report.
- **Other:** SQL (HakerRank), R Programming (John Hopkins), MATLAB On-Ramp