Khiran Kumar Chidambaram Sivaraman

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EDUCATION

Master of Professional Studies - Data Science University of Maryland, Baltimore County Bachelor of Technology - Mechanical Engineering SRM Institute of Science and Technology

EXPERIENCE

Radiance Technologies - Data Scientist, Finance Optimization team

- Enhanced system responsiveness from 4 seconds to 2.4 seconds (40% increase) in 4 months by implementing CI/CD practices with Jenkins, Python, and Salesforce integration.
- Decreased marketing costs from \$50,000 to \$40,000 (20% reduction) and reduced manual errors from 5% to 3.75% (25% reduction) in 3 months using Python (Pandas, Scikit-learn), automated data validation checks, and customer segmentation techniques.
- Improved model accuracy from 85% to 96% and ROC-AUC from 0.90 to 0.9957 in 4 months by evaluating models with Random Forest using Python (Scikit-learn) and deploying performance metrics analysis tools.
- Increased data management efficiency by 30%, reducing query processing time from 5 seconds to 3.5 seconds in 4 months using optimized SQL queries and ETL jobs on AWS (S3, Redshift) and Snowflake and performed transformations using DBT. Conducted multiple A/B tests for targeted marketing campaigns using SQL and R.
- Developed notebooks in Databricks to transform the data using PySpark, also to streamline and curate the data for various business use cases.
- Boosted natural language understanding accuracy by 25%, improving task effectiveness in sentiment analysis and entity recognition over 5 months using advanced techniques like transformers, GPT, BERT, and PyTorch.

Vanguard - Data Analyst, Integrated Data Optimization Team

- Extracted and transformed data from CSV, JSON, and Excel into MS SQL Server, reducing data processing time from 12 hours to 2 hours per week (83% reduction) and saving over 10 hours weekly by automating the workflow with Python and SQL.
- Developed and maintained finance dashboards in Tableau, initially providing static reports that took 2 days to compile. Upgraded to interactive dashboards, tracking 15+ KPIs, which increased decision-making speed by 25% and improved reporting accuracy by implementing real-time data updates over a 3-month period.
- Led the creation of a predictive model using Scikit-learn and PyTorch, enhancing resource allocation and investment accuracy from 70% to 85% (15% improvement), with model deployment and performance evaluation completed within 2 months timeframe.
- Integrated JIRA with Confluence to streamline tracking of database changes, **improving change management efficiency by 30% and reducing issue resolution time by 40%**, while also providing First-Level on-call support on a rotating schedule for timely issue resolution.

Graduate Teaching Assistant - University Of Maryland Baltimore County

- Thoroughly reviewed the code, graded the assignments, and provided feedback to 50 students in the Intro to Data Analysis and Machine Learning course.
- Prepare, execute, and share the final solution key of the assignments to students, and complete multiple projects assigned by the professor.
- Mentoring and clarifying course-related questions
- Work diligently to complete the assigned projects within the deadlines while meeting the priorities and deliverables.

HWASHIN Automotive India Private – Limited - Quality Assurance Team

- Optimized quality control for raw materials inspections by identifying and addressing issues through root cause analysis and statistical tools. Initially, material waste was 15%. After implementing these optimizations using MINITAB and statistical analysis, waste was reduced to 13.5% (10% reduction) within 5 months.
- Conducted Process Capability Studies with MINITAB, starting with a process variation rate of 20%. After analyzing and implementing improvements, process variation was reduced to 17% (15% improvement), leading to a boost in product quality.
- Leveraged 8D methodology and MATLAB for troubleshooting and quality enhancements in the manufacturing process. Initially, warranty claims were 10% of total units sold. After 5 months of applying these methods, warranty claims decreased to 8% (20% reduction).
- Ensured new product quality assurance by integrating advanced testing and quality control procedures. **Initially, customer satisfaction was at 75%**. After enhancing quality assurance processes, satisfaction **increased to 88% (18% improvement)**.

Pennsvlvania. USA | Mar 2023 - July 2023

January 2021 - December 2022

Remote, USA | Aug 2023 - Present

May 2016 - May 2020

Chennai, India | May 2020 - Dec 2020

Maryland, USA | June 2022 - Sept 2022

SKILLS

Languages

Data Processing & Streaming

Machine Learning Algorithms

Frameworks & Tools

PySpark, Apache Kafka, Pandas, NumPy, Airflow, Snowflake, ETL, Data Modeling, Random Forest, Regression, SVM, Decision Tree, Xgboost, TensorFlow, Keras, Scikit-learn, PyTorch, LSTM, Tableau, Power BI, Excel, SSMS, SSIS, SSRS, NodeJS, JIRA, GitHub, Peoplesoft, Hadoop, DBT, Spark, Matplotlib, Scikit Learn, AWS, GCP, Databricks, Redshift, AWS EC2, AWS S3, Docker, Jenkins, CI/CD Pipelines

PROJECTS

Customer Segmentation and Analysis / Language: Python 🖓

- Performed customer segmentation to divide the customer base into distinct groups based on product characteristics and behaviors.
- Prepared data for analysis by handling missing values, removing outliers, and normalizing data for consistency and accuracy.

Python - Jupyter Notebook, SQL, R, DAX, REST API,

- Created detailed customer profiles including demographics, preferences, and buying behavior.
- Conducted RFM analysis to identify high-value customers with substantial purchase behavior.

Neural Network Analysis of a heat pipe using hybrid nano fluids / Language: Python 🖓

- Conducted and automated a comprehensive analysis of a heat pipe charged with hybrid nano-fluids using machine learning techniques in Python.
- Employed a Deep Convolutional Neural Network (DCNN) model written in Python with TensorFlow (Keras), ReLU function to simulate inputs.
- Achieved an accuracy-correlation coefficient (R^2) of 0.991 with the DCNN model.
- Increased heat pipe efficiency by decreasing other parameters (water inlet temperatures).

PUBLICATIONS

- [1] Kumararaja, K., **Khiran Kumar, C. S., Sivaraman, B.,** "A convolutional neural network analysis of a heat pipe with hybrid nanofluids," International Journal of Ambient Energy, pp 6284–6296, 2021, Taylor & Francis. [Online]. Available: https://doi.org/10.1080/01430750.2021.2014959.
- [2] Vishnu Vardhan Battu, Khiran Kumar, C. S., Kalaiselvi Geetha, M., "Lung disease classification based on lung sounds—a review," in Computational Intelligence in Healthcare Informatics, D. P. Acharjya and Kun Ma, Eds., vol. 1132, Springer, 2024, pp 233–250.
 [Online]. Available: https://doi.org/10.1007/978-981-99-8853-2_15.
- [3] Vishnu Vardhan, B., Kalaiselvi Geetha, M., Syam Prasad, G., Khiran Kumar, C. S., "Abnormal sound detection in lungs using vest-coat stethoscope using deep learning algorithm," in Explainable Artificial Intelligence in Healthcare Systems, A. Anitha Kamaraj and Debi Prasanna Acharjya, Eds., Nova Science Publishers, 2024, pp 125–140. [Online]. Available: https://doi.org/10.52305/GOMR8163.
- [4] Chinthala, N. S., Lewis, J., Vuppalapati, S., Sivaraman, K. K. C., Toley, C. V., Ashqar, H., "Impact of covid-19 on taxi industry and travel behavior: A case study on chicago, il," 2024. arXiv: 2411.08168 [physics.soc-ph]. [Online]. Available: https://arxiv.org/abs/2411.08168.

CONFERENCES

- K. Kumararaja, B. Sivaraman, C. S. Khiran Kumar, Aman Pandey and B.Karthikeyan, (2019), "Investigation on Heat Pipe with Hybrid Nanofluid", 2nd International Conference on Recent Trends in Metallurgy, Materials Science and Manufacturing (IMME19), held on December My-28, 2019 at National Institution of Technology, Tiruchirappalli.
- 2. K. Kumararaja, C. S. Khiran Kumar and B. Sivaraman, (2022), "Predicting the Outlet Temperature of a Heat Pipe with Hybrid Nanofluid Using Deep Neural Networks^{*}, 2nd International Black Sea Modern Scientific Research Congress, held on December 21-22, 2022 at **Rize, Türkiye.**

EXTRACURRICULARS

Organizer - SRM Institute of Science and Technology - Chennai, India

Organized and managed KRATORQ19, a national-level technical symposium with over 500 participants, ensuring smooth execution of 20+ technical and non-technical events.

July 2023

Oct 2019

Jan 2020 - May 2020