Gayathri Selvaganapathi [ML Engineer]

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PROFESSIONAL SUMMARY

Machine Learning Engineer with five years of experience in machine learning, computer vision, and IoT. Proven expertise in developing, deploying, and maintaining ML models in production. Proficient in Python, scikit-learn, TensorFlow, Azure, and CI/CD pipelines. Skilled in translating business requirements into AI solutions, with strong problem-solving and analytical abilities. Committed to leveraging the latest AI advancements to drive business results.

WORK EXPERIENCE

Fraunhofer IWU   **Chemnitz, Germany**
Machine Learning Associate   *May 2023 – January 2024*
- Utilized Streamlit to create interactive dashboards for real-time visualization of error data from a Smart Factory 4.0 production line, improving decision-making processes and reducing response time by 20%.
- Developed and implemented algorithms for predictive maintenance using supervised machine learning (regression models) and causal graph analysis, which reduced system downtime by 15%.
- Implemented experiments in MLFlow experiments, to compare the models and select the best performing model.
- Collaborated with cross-functional teams to integrate the API endpoint with existing systems, leading to data accessibility and utilization across the organization.

Mercedes Benz Mobility AG   **Stuttgart, Germany**
Data Engineering Researcher   *April 2022 - October 2022*
- Developed and deployed ETL pipelines for handling large datasets and developed big data processing workflows using Azure Data Bricks and Azure Data Factory, resulting in a 40% increase in data availability and reducing data processing time by 50%.
- Developed the Data Quality Framework Library to conduct regular assessments of data quality, resulting in a 15% improvement in overall data accuracy and reliability.
- Executed data preparation and transformation tasks and Data onboarding checks, such as repseudonymization, structured data flattening, Databricks notebook conversion from Scala to Python, etc.
- Utilized Azure Data Bricks and Azure Data Factory to streamline data processing workflows and set up the CI/CD pipelines for smooth code deployments.

Intenta GmbH   **Chemnitz, Germany**
Data Scientist   *July 2021 – February 2022*
- Designed and implemented a real-time dashboard using Microsoft Power BI to track fleet performance.
- Identified the most suitable visualization tool after conducting in-depth research on various platforms for requirement specific statistical KPI data visualization and user engagement.
- Developed the services for data processing of OSM geodata, resulting in an increase in data processing speed and accuracy.
- Collaborated to develop and implement a data processing pipeline for the PostGIS database structure, resulting in an improvement in data retrieval speed.

Larsen and Toubro, Smart World and Communication   **Hyderabad, India**
Senior ML Engineer   *July 2017 – March 2020*
- Configured and maintained more than 300 automatic license plate recognition cameras for the traffic management system.
- Developed and trained a machine learning model with an accuracy rate of 80% in optical character recognition for vehicle license plates.
- Implementation and configuration of algorithms to detect traffic violations such as red-light violations, non - helmet violations using image processing, machine learning, and computer vision techniques resulted in a 20% increase in overall efficiency for law enforcement agencies.
- Implemented NLP techniques for sentiment analysis on social media data to improve traffic management system responses, reducing incident response times by 30%.
- Developed interactive Tableau dashboards displaying real-time analytics from IoT sensors, improving decision-making processes and increasing transparency by providing access to KPI metrics.

AREA OF EXPERTISE

- Machine Learning [scikit-learn, TensorFlow, PyTorch]
- Data Analysis & Visualization [PowerBi, Tableau, QlikView, Streamlit, Dash, Superset]
- Statistical Modelling (R, IBM SPSS, SAS-JMP)
- MLOps (MLFlow, Docker, Kubernetes, Jenkins, Git)
- Cloud computing framework (Google Cloud and Amazon Web Services, CML)
- Project Management: [Agile driven, Data Governance]
- Database design SQL (MySQL, PostgreSQL, Pyspark)
- Data Wrangling, Web Scraping
- Programming Languages (Python, C++)

RESEARCH PROJECT

- Defended the dissertation on "Smart Home Energy Management System Using Cloud Computing," showcasing remote control and monitoring of electrical devices via the Internet and demonstrating power reduction using Pulse Width Modulation technology.

- Defended the thesis on "Comparative Analysis of Methods for Automated Fault Prioritization in Cyber-Physical Production Systems" by demonstrating how leveraging causal knowledge structures enhances fault prioritization accuracy in the CPPS environment, with Causal Graph models outperforming baseline and Machine Learning models like Random Forest and Decision Tree Regression and showcasing a reduction in system downtime.

EDUCATION

Technische Universität Chemnitz   **Chemnitz, Germany**
Master of Science in Automotive Software Engineering (CGPA: 9.0/10)   *March 2024*

National Institute of Technology, Puducherry   **Puducherry, India**
Bachelor of Technology in Electronic and Communications Engineering (CGPA: 9.4/10)   *May 2017*

SKILLS AND INTEREST

Software Skills: IDEs (Visual Studio, Jupyter, Pycharm) | Version control (GitHub, GitLab, BitBucket) | Agile (Jira) | Documentation (Confluence)|

Soft Skills: | Project management | Data und quantitative analysis | Complex problem solving | Conceptual thinking | Understanding of technical Documentation | Service oriented |

Interests: Technical Blogging (Medium, Hashnode), Reading research papers, Hiking

SPECIAL ACHEIVEMENTS

- Received the title "Emerging Talent 2018" for innovative work in the previous position. (Larsen and Toubro Construction, Smart World and Communication).
- University 2nd rank holder for the Bachelor of Technology 2013-2017.

OTHER DETAILS

DOB   : 03-05-1995
Gender   : Female
Nationality   : Indian
Visa Status   : Dependent Pass (Singapore)
Languages   : English (C1), German (B1), Tamil (Native)
Availability   : immediate