Shashank Hebbar S

Senior Systems Engineer (AI/ML)

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Roles

Machine Learning Engineer, Data Scientist, Deep Learning Engineer, Natural Language Processing (NLP) Engineer, Generative AI Engineer, Senior Analyst

Summary

Experienced Analyst with over 2.5 years of expertise in statistical analysis and machine learning. Proficient in Python for modeling and analysis, adept at extracting actionable insights to drive strategic decisions. Collaborative team player, passionate about innovation and continuous learning, contributing effectively to business success.

Experience

Senior Systems Engineer (AI/ML) — Nov 2021 – Present
Infosys Ltd. — *Bengaluru, Karnataka, India*

- Developed a conversational chat bot for an Aviation industry.
- Algorithm development for corrosion rate prediction.
- Developed custom text classifier model for classifying inspection documents.
- Algorithm development for data extraction from PDF documents using PyMuPDF.
- Algorithm development for Turbine power output prediction.

Junior Engineer — Jun 2017 – Jul 2018
Ducom Instruments Pvt. Ltd. — *Bangalore, India*

- Image Data Acquisition and Calibration.
- Data analysis and evaluation of test results for Tribology instruments.
- Electronic controller wiring, testing and calibration of sensors.

Technical Skills

The following are the skill sets that I can adapt to or I've worked with:

Classical ML: Classification, Regression and Clustering
Tools/Techniques: Transformers, Deep Learning Models, Natural Language Processing, Transfer Learning, Prompt Engineering
Languages: Python, Java, SQL
Frameworks: PyTorch, TensorFlow, Keras, Flask/Django, Streamlit, Langchain
Tools: Git, AWS, ChatGPT, Docker, MS Excel, Power BI
Database: Neo4j, MySQL, MongoDB
IDEs: VS Code, Jupyter NB, Jupyter Lab, PyCharm, MATLab
Libraries: RegEx, Pandas, HuggingFace, NumPy, Matplotlib, Seaborn, NLTK, Spacy, PyMuPDF, Tabula

Education

Dr. Ambedkar Institute of Technology — Bengaluru, Karnataka, India
Bachelor of Engineering in Mechanical Engineering (8.2 CGPA) — *Sep 2018 – Aug 2021*

Govt. Toolroom and Training Centre — Bengaluru, Karnataka, India
Diploma in Mechanical Engineering (87.0%) — *May 2014 – June 2017*

PROJECTS

Corrosion Management Systems | *Python, Scikit Learn, AWS, SQL, Classical ML, Git, Custom Package*

Algorithm development for real-time corrosion rate prediction of different corrosion mechanisms.
Solution

- Data ELT/pre-processing, Exploratory Data Analysis.
- Algorithm Development (physics based and ML based) for real-time corrosion rate prediction.
- Data Validation and VM Testing

Impact

- Predicts real-time corrosion rate, Susceptibility to Failure, Remnant Life and other parameters that helps save time, cost and reduces risks involved.

Conversational Chat-bot | *Python, LLMs, AWS, RAG, Knowledge graphs*

Problem Statement: Conversational bot that aids Aviation engineers to draft repair documents.
Solution

* Data ELT, EDA and storage in the form of knowledge graphs
* Data retrieval via dynamic cypher queries generated via LLMs
* Summary generation and relevant files retrieval via LLMs and prompt templates

Impact

* Aids aviation engineers in drafting a new repair/inspection document reducing downtime and increasing productivity.

Inspection Text Classifier | *Python, PyTorch, BERT, RegEx, HuggingFace*

Problem Statement: Inspection document description classifier using BERT
Solution

* Text ELT/pre-processing and EDA.
* Model fine tuning, training, prediction using BERT
* Validation using classification report and F1 score

Impact

* Contextualize and classify whether the input text talks about defect or not.

Real-time Turbine efficiency monitoring | *Python, Machine Learning, Scikit Learn, Git*

Problem Statement: Real-time Turbine efficiency monitoring using sensor data using ML
Solution

* Input data Extraction, EDA, analysis
* Model building, testing
* Model deployment, monitoring, validation

Impact

* Used to predict downtime and turbine life by monitoring real-time sensor data

EI data analysis | *Python, PyMuPDF, Tabula, Engineering Analysis*

Problem Statement: Dimensional data analysis for repairable limit prediction
Solution

* Data extraction, Data Cleansing from CMM, EI PDF documents.
* EDA, Model building, testing, validation
* Repairable limit prediction of parts

Impact

* Reduces Cost and machine downtime.

CERTIFICATION

Google Cloud certified Associate Cloud Engineer
IBM Certified Data Science Professional (V2)