Chaithanya Kumar. S

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Profile Summary

- **Over 8 years** of experience with over **5 years of experience in Data Science**, functional experience includes the fields of Deep learning, Machine Learning, Data Analytics and Visualization, MLOps.
- Working on **research and implementation of computer vision** and deep learning techniques to enhance **image resolution of semiconductor wafer data, and application of machine learning techniques for defect analysis.**
- Trained corporate organizations like EY on Power BI and Deep Learning.
- Looking for an opportunity that utilizes my existing skills and provides exposure at developing and deploying scalable robust ML/AI applications.

Work Experience

1. **Title:** Senior engineer Data Science   Since July 2021
   Company: Micron
   - Leading the efforts on code standardization and deployment of machine learning solutions.
   - Leverage machine learning to predict the outcome of the manufacturing processes on silicon.
   - Research and implementation of image super resolution techniques for wafer scans
   - Driving the implementation and adoption of experiment tracking, model versioning and code standardization

   Projects:
   - **Nondestructive resolution enhancement of wafer site scans:** Develop machine learning solution for image super resolution of wafer scans, aimed at significant reduction is time to completion, process induced defects and tool cost and maintenance. Developed a adopted from RDN to enhance the resolution at a rate of 120 images in 2 minutes.
   - **Critical Dimension estimation:** Developed models to predict the critical dimensions leveraging the process data, machine data, probe, and electrical test information. Intend to enable early detection of process variations and provide an estimate of the critical dimensions which generally take 2 weeks to become available to the SME's.

2. **Title: Data Scientist**   March 2020 to June2021
   Company: Claim Genius:
   Classify and localize damages on automobiles using computer vision and deep learning techniques. Responsible for curated data analysis, generating data statistics, model training, validation, qa data preparation and validation. Model deployment lead. Responsible for coordinating the integration of the models into tools by collaborating with the engineering team. We use dockers and run models on aws for production. Introduced the team to an existing statistical technique to calculate the agreement rate between curators.
   Projects:
   ● **Scratch detection on automobile images:** Applied object detection deep learning models like M-RCNN to detect scratches on car parts, used an ensemble of YOLO + M-RCNN to achieve a 5 % increase in F-Score.
   ● **Glass parts damage detection:**Using Classification algorithms like EfficientNet and image augmentation techniques, improved the model accuracy from 76% to 83%.
   ● **Claim level repair replace decision:**Developed a meta learning model that is responsible for the final decision of repair,replace or do nothing for each external part of the automobile. Achieved over 80% accuracy per class and per part (12 parts). Applied techniques like blending of classifiers, light gbm to achieve this.

3. **Title: Data scientist** 2018 - 2020
   Company: [Koinearth](#) (a part of INSOFE)
   Developed an agent-based simulation package in python capable of making over 3000 simultaneous calls to the blockchain, this was used for performance analysis and analytics pipeline stability testing for the blockchain platform. Also worked on data modeling, complex event processing and data pipeline setup with Kafka and pyspark, deployed these on aws using dockers in the cloud computing platform, aws.
   Projects:
   - **Agent Based Simulation : (**Tools: Python, docker, aws.) Developed a python package to simulate the activity of the participants (agents) in a supply chain environment. Configurable agent behavior using statistical distributions helps achieve near real world behavior or agents. The package includes functionality to interact with smart contracts using REST APIs. Capable of making 3000 simultaneous API calls. This helped validate the smart contracts, event pipeline and stability of the product (marketsN).

4. **Title:** Data Scientist 2017-2020
   Company: INSOFE
   Worked on consulting and research projects in the field of Machine Learning, Artificial Intelligence and Optimization. This involves data collection, data cleaning and preparation, implementing ML/AI algorithms and evaluating the performance gains over present systems, deploying using docker containers.
   Projects:
   - **Hybrid architecture model for product category classification for an apparel e-commerce website:** Trained a hybrid architecture model with structured, text and image data for classification of items into category buckets. Trained CNN for image feature extraction, LSTM for text feature extraction and MLP for structured data, combined the output and trained a hybrid model, achieved 79% f1 score.
   - **Entity extraction from Resume:** Extract entities from resume to match the job profile with candidate profile. Used prodigy for data annotation and LSTM to train a model for recognizing the entities. Achieved 63% exact match f1 score.

5. **Title**: Data Scientist 2017-2017
   Company: [Sutherland Healthcare Solutions](#)
   Built a claim recall prediction model with 86% recall. I was also responsible for creating a **"Question Answering system"** using python, capable of entity extraction to retrieve information from SQL databases.
   Tools used: python, R, power bi, tableau.

6. **Title**: Transaction Risk Investigator 2014-2016
   Company: Amazon

Skills and competencies

Well versed with machine learning, deep learning frameworks and optimization techniques, python is my preferred mode of development but have experience with development in R as well.

Education and certifications

1. Pursuing Masters in Data Science from Indian Institute of Technology Hyderabad (IITH), expected to complete in 2024
2. Big Data Analytics and Optimization (CPEE) from **International School of Engineering (INSOFE), Hyderabad, India.**Ranked **first** in a class of 54 highly qualified individuals with a score of 84%.
3. **B. Tech in Mechanical Engineering from TKR College of Engineering and Technology, Hyderabad, India** (affiliated to JNTU-H) - 80.44%