

YASHASVI PEDIREDDI

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Summary

Experienced and driven programmer with a robust foundation in statistics, and machine learning. Seeking opportunities in data and AI domain.

Education

University of Nottingham

MSc Machine Learning in Science(**Distinction**)

Sep. 2022 – Dec 2023

Nottingham, United Kingdom

National Institute of Technology Patna

B.Tech Electronics & Communication Engineering

August. 2014 – Nov 2018

Patna, India

Technical Skills

Technical: C, C++, C#, Python, CUDA, TensorFlow, PyTorch, OpenCV, Docker, Git, Visual Studio, SQL, Redis, Kafka, AWS, MongoDB, Tableau, Pandas, NumPy, Flask, Django, Plotly, Streamlit, Jax, PostgreSQL, Neo4j

Knowledge Areas: Computer Architecture, Operating System, Embedded Programming, Machine Learning, Backend Engineering, Data Structures & Algorithms, Distributed Computing, High Performance Computing, Computer Networks, Concurrency, Multithreading, Databases, Hypothesis Testing

Experience

Cognizant

Software Engineer

August 2018 – June 2022

Chennai, India

- Developed CNN models using TensorFlow to generate tags for image and video data, resulting in an accuracy of 95% and serving as the foundation models for wider systems using image analytics.
- Implementing quantization techniques using Tensorflow to further optimize models for edge computing, decreasing the inference time by 40% .
- Implemented region masking preprocessing component using OpenCV and Python, resulting in boosting the accuracy of image descriptors by 30%.
- Developed a visualization application for identifying significant regions in the images for classification using ReactJS for UI and Python and TensorFlow for generating class activation maps for the models.
- Implemented a multi model deep learning system using TensorFlow to integrate with the image feature descriptors for recommendation system, resulting in decreasing the inference time by 70% and increasing overall accuracy by 20%.
- Developed a data processing pipeline on AWS Glue using Pandas, PySpark, and SQL, processing over 1 million records daily, resulting in a 55% reduction in execution time. Facilitated seamless integration among various AWS cloud services and Google BigQuery.
- Developed the backend to deploy machine learning models as a service using Flask, Django, AWS EC2, and Python, ensuring seamless integration of service within the broader system architecture.
- Contributed to the virtual reality prototypes developed in Unity and Unreal Engine by implementing interaction logic and integration with the backend using C# and C++ to showcase the state of virtual & gamified shopping experience.

Projects

Graph Neural Networks

April 2023 – September 2023

- Engineered a data pipeline leveraging Python and the PyTorch Geometric framework to generate node-level and edge-level features for molecule data, directly sourced and processed from raw datasets.
- Developed graph deep learning models utilizing Graph Attention Network, Graph Convolutional Network, and Message Passing Neural Network architectures to predict the molecular energies from the molecular data generated from the pipeline.
- Performed an in-depth comparative examination of the models by implementing a nested k-fold cross-validation strategy, resulting in graph attention network producing the best mean absolute error of 24kcal/mol.

On Device Deep Learning

January 2022 – April 2022

- Implemented a custom architecture for on device deep learning based on SqueezeNet and ImageNet architecture for Raspberry PiCar, decreasing the inference time from 900ms to 120ms.
- Utilized TensorFlow for implementing quantization techniques to further optimize the deep learning model for on-device execution on the Raspberry PiCar, decreasing the inference time from 120ms to 70ms.