Swastik Haldar

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Experience

Sizzle.gg **Bengaluru**
Computer Vision Engineer *April 2023 - Present*
- Worked on Ad Placement project that involved working with and training Segmentation models, Object Detection and Planar Tracking models and created a pipeline which places planar ads into game clips.
- Developed a novel game identification model with Self Supervision which improved accuracy.
- Worked with Large Multimodal Models for ad tagline generation and video understanding.

Arya.ai **Remote**
Data Scientist *September 2022–April 2023*
- Worked in the solutions team with a renowned Health Insurance provider data and automating claim processing pipeline.
- Experimented with different types of architectures including Transformer based models for tabular data for classification.

IBM Research Lab India **Bengaluru**
Research Software Engineer *July 2019-July 2021*
- Worked on the Trusted AI team for 2 years in the area of AI explainability and explored multiple avenues that involve generation of adversarial test cases.
- Developed and maintained a generic AI model testing framework which led to a publication at ICSE 2021.

Myntra Designs Pvt. Ltd. **Bengaluru**
Data Science Intern *May 2018–July 2018*
- Worked on improving the search retrieval performance of the search engine at Myntra.
- Experimented with generative approaches for retrieval improvement using synonym generation.

Education

Indian Institute of Technology Kharagpur **Kharagpur**
B.Tech in Computer Science and Engineering; CGPA:8.38/10 *July 2015 - June 2019*

Publications and Patents

Rule generation for machine-learning model discriminatory regions *2023*
- We Propose a method of generating a set of rules delineating a discreminatory region within a machine-learning model.

Reliable Counterfactual Explanations for Autoencoder based Anomalies *CODS-COMAD 2021*
- We present an algorithm that generates a diverse set of proximate counterfactual explanations for a given autoencoder anomaly and also introduced a notion of reliability of counterfactuals.

Testing Framework for Black-box AI Models *ICSE 2021*
- we present an end-to-end generic framework for testing AI Models which performs automated test generation for different modalities such as text, tabular, and time-series data and across various properties such as accuracy, fairness, and robustness.

SPIN: A Fast and Scalable Matrix Inversion Method in Apache Spark *ICDCN 2018*
- We propose a different scheme of matrix inverse computation based on Strassen's matrix inversion algorithm and discussed our implementation in SPARK; then compared it's performance different popular techniques.

Projects

CUDA CNN inference with thread coarsening (supervised by Prof. Soumyajit Dey)
- We implemented the forward pass of CNN (alexnet) network with cuda incorporating thread coarsening and compared the performance with different granularities.

Negation Queries on Heterogeneous Knowledge Graph(supervised by Prof. Niloy Ganguly)
- We embed graph nodes in a low-dimensional space and represent logical negation operators as learned geometric operations in this embedding space.

Skills and Expertise

Languages Python, C, CUDA, C++, Java
Tools PyTorch, Docker, Prefect, scikit-learn, OpenCV, Tensorflow, Keras