Karnik Kanojia - Software Engineer

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EDUCATION

BTech. Computer Science and Engineering with Specialization in Data — India | 2020-24
Vellore Institute of Technology
Coursework: Data Structures and Algorithms; Operating Systems; Computer Security; Predictive Analytics

WORK EXPERIENCE

MI4PEOPLE | Data Scientist (Part-time) — Berlin, DE | Present

- Developed an open-source computer vision system at MI4People for accurate disease identification from diverse medical images, offering free global access to medical professionals.
- Utilized transfer learning techniques on DenseNet121 to achieve a 0.88 AUC, leveraging Azure Cloud Services to construct a scalable and high-performance disease recognition system. Contributed to improved diagnostics and enhanced patient care.

NATIONAL UNIVERSITY OF SINGAPORE | Research Intern — Singapore, SG | Jan 2023 - May 2023

- Authored a research paper on market manipulation detection employing advanced techniques such as LSTM with Dynamic Thresholding and TadGAN (Time Series Anomaly Detection using Generative Adversarial Networks). Demonstrated the efficient detection of anomalies in large volumes of data. Attained an average F1-Score of 0.501 across multiple stock datasets of various companies.

GROWTHSCRIBE | Full Stack Developer Intern — New Delhi, IN | Jun 2022 – Jul 2022

- Enhanced site performance through optimization techniques, leading to a 10% reduction in TTI (Time to Interactive) and improved conversion rates. Simplified custom apps and plugins for WordPress and Shopify to facilitate the company's online store development and enable reusability.

PROJECTS

OPTIMIZED OBJECT DETECTION FOR AUTONOMOUS VEHICLES — PyTorch, Intel® oneAPI
Implemented Yolov7-Intel-Optimized, demonstrating an object detection model optimized with OpenMP parallelization and NUMA bindings. Achieved a refined model with a 0.723 mAP, delivering 60ms per frame inference speed. Showcased superior performance on Intel architectures, enabling precise and efficient real-time object detection.

DISEASE DETECTION AND LOCALIZATION IN X-RAYS — TensorFlow, Docker, GCP
Serviced an AI-based application to assist doctors in rapidly and accurately diagnosing fractures, reducing workload. Achieved a Cohen Kappa score of 0.701 and an accuracy of 0.7864 by employing transfer learning from DenseNet-169. Implemented the Grad-CAM technique to effectively localize diseases on X-Rays.

SPAM DETECTION USING BI-LSTMS — TensorFlow, Flask, Docker
Utilized GloVe to train a Bi-LSTM neural network for binary classification, achieving a resolved F1 Score of 0.79 and 92% Accuracy. Containerized the application with Docker and deployed on Heroku with a Flask-based REST API.

IAAS FOR STATIC DEPLOYMENTS AND VM PROVISIONING ON AWS — Pulumi, Flask

CONTRIBUTIONS

MOZILLA FIREFOX V101 | Outreachy — India | Mar 2022

- Fixed ESLint-related build errors for Firefox v101 by addressing unmerited global variables in xpcshell-test files.

FACE-X | GSSOC'22 — India | Jan 2022

- Remodelled vision-based applications for generating 3D faces with smart facial animation using OpenCV and dlib.

SKILLS

Python, C, C++, Javascript, Java, Bash, SQL, HTML, CSS(SCSS), NodeJS, Express, ReactJS, NextJS, Tensorflow, OpenCV, NLTK, Flask, Docker, Google Cloud Platform, Kubernetes