Eishkaran Singh

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Education

Thapar Institute of Engineering and Technology — Patiala
BTech Computer Engineering — September 2021 - Present

Indian Institute of Technology — Madras
Bs Data Science and Applications — January 2022 - Present

Publications

GlucoBreath: Non-Invasive Glucometer to Detect Diabetes using Breath *Ritu Kapur, Yashwant Kumar, Swati Sharma, Shivani, Eishkaran Singh, Dhruv Rohilla, Bhupinder Kumar, Vikrant Kanwar, Arnav Bhavsar, and Varun Dutt*
Pre-Print Link:https: `https://doi.org/10.36227/techrxiv.24448963.v1`
Under Review IEEE Sensors Journal

AIM-CVT: Design of a Framework for the AI-Enabled-Multilingual Court Verdict Translator *Eishkaran Singh, Sachin Kansal, Arshjot Singh*
Submission Id:- EVOS-D-23-00559

Experience

Massachusetts Institute of Technology — November 2023 - Present
Research Intern under Prof. (Dr.) Hamsa Balakrishnan
- Currently engaged in independent research aimed at mitigating hallucination in Large Language Models (LLMs).
- Investigating novel techniques and methodologies to enhance model robustness and reduce the generation of inaccurate or misleading outputs.

Carneige Mellon University — November 2023 - Present
Research Intern under Prof. (Dr.)Min Xu at XuLabs
- Currently engaged in research of biomedical image analysis, with a focus on the application of cryo-electron tomography (cryo-ET) and cryo-electron microscopy (cryo-EM) techniques for 3D image processing and analysis.

Indian Institute of Technology Indore — July 2023 - December 2023
Research Intern under Prof. (Dr.)Chandresh Kumar Maurya
- Proficiently contributed to the alignment of diverse text-to-text and text-to-audio scripts across 14 distinct Indian languages, employing a range of advanced aligner tools.
- Employed NLP and IndicNLP libraries for text preprocessing, constructing a gold standard dataset to drive the application of various ML/DL models.

Indian Institute of Technology Mandi — June 2023 - December 2023
Research Intern under Prof. (Dr.)Varun Dutt in Digital Nose Project
- Orchestrated migration of local workflows to servers using automation and DevOps principles, optimizing operational efficiency and boosting machine learning model accuracy.
- Utilized FastAPI to create asynchronous functions for process automation and applied machine learning algorithms, including classification and stack meta-modeling, to boost predictive accuracy.

Thapar Institute of Engineering and Technology — May 2023 - November 2023
Research Intern under Prof. (Dr.) Sachin Kansal
- Developed an efficient pipeline for extracting frames from video data, utilising advanced image processing techniques, parallel processing, and error handling.
- Leveraged Beautiful Soup and bs4 libraries to surpass Google Translate's 5000-character limit, enabling translation of unlimited text seamlessly.

Thapar Institute of Engineering and Technology — June 2023-July 2023
Guest Lecturer
- Invited as guest of honour to deliver the lecture in Thapar summer School of Machine learning and deep Learning and delivered 6 lectures on Image Processing and natural language processing.

Projects/Achievements

PixelMind AI — May 2023
- Paradox'23 in Indian Institute of Technology Madras organised a contest in thhe domain of Image enhancement for students and industry professionals where I won 2nd Position and won a cash Prize of Rs.50K.
- Utilized a combination of C language and Python, along with image processing funcitons, to significantly expedite image enhancement compared to competitors in a time-efficient manner.

Kaggle Master — June 2023
`https://www.kaggle.com/eishkaran`
- Participated in a global Kaggle competition on Binary Classification with Software Defects, competing against 1702 teams worldwide. Achieved an impressive world ranking of 44, placing in the top 3% of participants. Employed advanced classifier models to optimize accuracy within the shortest time frame, demonstrating a strong commitment to efficiency and excellence in data analysis and predictive modeling

Skills

Programming Languages:	Python, C++ ,C
Database Management Systems:	MySQL , Oracle
Cloud Computing:	GCP, AWS
Web Development:	HTML , CSS, JavaScript
Tech Stack:	Flask , FastAPI, Docker, Tableau, Power BI
Libraries / Frameworks:	Pandas, Numpy, Seaborn, Tensorflow, Pytorch, XGBoost, scikit-learn, OpenCv, PIL
Machine Learning:	Regression, Classification, Clustering, Neural Networks, Deep Learning, LLM
Soft Skills:	Public Speaking, Leadership