FENIL DENISH BARDOLIYA

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EDUCATION

Master of Science in Computer Science Expected May 2025
Arizona State University
- Relevant Coursework: Digital Video Processing, Nature Language Processing, Planning and Learning Methods in AI, Biocomputing, Information Assurance and Security, Image Analytics & Informatics

Bachelor of Engineering in Computer Science July 2023
Birla Institute of Technology and Science Pilani
- Relevant Coursework: Probability and Statistics, Object Oriented Programming, Database Systems, Data Structures and Algorithms, Network Programming, Software Development for Portable Devices, Reinforcement Learning, Machine Learning, Image Processing, Computer Vision

PUBLICATIONS

Verma, Aayush Atul, Amir Saeidi, Shamanthak Hegde, Ajay Therala, Fenil Denish Bardoliya, Nagaraju Machavarapu, Shri Ajay Kumar Ravindhiran et al. "Evaluating Multimodal Large Language Models Across Distribution Shifts and Augmentations." In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition, pp. 5314-5324. 2024.

TECHNICAL SKILLS

- Programming Languages: Python, Kotlin, Java, C++, SQL
- Databases: Firebase Firestone, Firebase Realtime Database, MySQL, MongoDB
- Libraries and Frameworks: Scikit-learn, TensorFlow, PyTorch, matplotlib, Numpy, Pandas, NLTK, networkx, Keras, REST, Git

WORK EXPERIENCE

Computer Vision Research Aide, DREAMS LAB, Arizona State University March 2024 - Present

Assistant Engineer, Samsung Semiconductor India Research, Bengaluru, India January 2023 - July 2023
- Led a team of five for automation and anomaly detection of first-level logs.
- Adopted hybrid LSTM encoder-decoder architecture for anomaly detection of SIP and IMS failures over VoLTE networks. Attained nearly 80% accuracy in detecting unknown internal errors.

Teaching Assistant, Computer Science and Information Systems, BITS Pilani, Course: Software Development for Portable Devices September 2022 - December 2022
- Conducted labs on Android Programming and designed quizzes for the assessment of 50 students. Restructured the course to Android Development in Kotlin.
- Reviewed over ten project ideas and mentored over 50 students to execute the idea.

Research Assistant, Computer Science and Information Systems, BITS Pilani, Topic: Ransomware Analysis September 2022 - December 2022
- Remodeled a hosted hypervisor with sandboxing to provide an isolated environment for static and dynamic analysis. Tested mainly three ransomware WannaCry, Petya, and CryptoLocker.

Research Assistant, Computer Science and Information Systems, BITS Pilani, Topic: Machine Learning models for Network Security January 2022 - May 2022
- Captured USB_BULK and USB_ISOCHRONOUS protocols of USB devices and developed a dataset of 200+ malicious and benign files for feature extraction and feature selection.
- Attained nearly 99% accuracy on AutoML models for the dataset.

Tech and Product Intern, GiveIndia June 2021 - August 2021
- Designed and analyzed a fundraising analytical dashboard with data metric filters for program, cause, NGO, period, etc., with PERN(PostgreSQL, Express, React, Node.js).

Android App Developer, Blyndr May 2021 - July 2021
- Managed two teams to work on the UI design and database creation. Developed a blind dating app for the LGBTQIA+ community at a startup. Published the Blyndr app on Google Play with 500+ downloads and users across 10 countries.

ACADEMIC PROJECTS

Depth Estimation using Monocular Images. September 2022 - December 2022
- Modeled a hybrid architecture of UNet with DenseNet for Depth Estimation. The bokeh effect is achieved by applying per-pixel Gaussian blur on the depth map iteratively using 2n+1 kernels.
- Demonstrated the output on a Web App hosted locally showcasing multiple inputs, depth maps, output image and blur strength of upto 10 times.

Sign Language Translation January 2022 - May 2022
- Refocused the problem from static images to video translation. The Phoenix14T dataset with more than 8000 videos was used with Transformer encoder-decoder architecture. Fine-tuned pre-trained T5-small model.

Boolean Information Retrieval System,HITS,PageRank algorithm January 2022 - May 2022

- Implemented a boolean IR system on a corpus of data consisting of 42 Shakespeare's novels and poems. Features include Tokenization, Stopword Removal, Stemming, Wildcard Query Handling (n-gram indexing), and Spelling Correction.
- Showcased PageRank and HITS algorithm taking into consideration of the hub scores and authority scores of a given document. Evaluated on self-developed dataset consisting of 10 documents.