NEVASINI SASIKUMAR

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EDUCATION

PES University Bangalore, India
Bachelor of Technology in Computer Science and Engineering, CGPA: 3.7/4 *Dec 2020 – Present*

- Coursework- Data Structures and Algorithms, Statistics for Data Science, Advanced Machine Learning, Natural Language Processing, Computer Vision, Linear Algebra, Operating System, Computer Networks, Database Management System

PUBLICATIONS

1. **Nevasini Sasikumar**,Krishna Sri Ipsit Mantri, "**STAGCN: Spatial-Temporal Attention Based Graph Convolutional Networks for COVID-19 Forecasting**", accepted for oral presentation at the 2023 ICLR First Workshop on Machine Learning & Global Health.
2. **Nevasini Sasikumar**, Krishna Sri Ipsit Mantri, "**Attention Based Variational Graph Auto-Encoder (AVGAE)**" invited to archive at ICLR 2023, Tiny Papers.
3. **Nevasini Sasikumar**,Krishna Sri Ipsit Mantri, "**Advancing Visual Understanding and Accessibility for All: Image Captioning for Low Vision**" accepted (poster) at 2023 VizWiz Grand Challenge Workshop, CVPR 2023
4. Krishna Sri Ipsit Mantri, **Nevasini Sasikumar**, "**Interactive Fashion Content Generation Using LLMs and Latent Diffusion Models**" accepted for poster presentation at Third Ethical Considerations in Creative applications of Computer Vision workshop, CVPR 2023.
5. Krishna Sri Ipsit Mantri, **Nevasini Sasikumar**, "**Image Denoising Using Diffusion Models**" accepted for Work-in-progress spotlight at 8th IEEE Workshop on Computer Vision for Microscopy Image Analysis, CVPR 2023.
6. **Nevasini Sasikumar**, Krishna Sri Ipsit Mantri, "**Monitoring Parkinson's Disease Progression Through Egocentric Vision: A Precision Health Approach**", accepted as an extended abstract at the Joint International Third Ego4D and Eleventh EPIC Workshop, CVPR 2023.
7. Krisha Sri Ipsit Mantri, **Nevasini Sasikumar**, "**Developing Methods for Identifying and Removing Copyrighted Content from Generative AI Models**", accepted at 1st Workshop on Generative AI and Law at ICML 2023
8. **Nevasini Sasikumar**,Krishna Sri Ipsit Mantri, "**Transfer Learning for Low-Resource Clinical Named Entity Recognition**", accepted at The 5th Clinical Natural Language Processing Workshop at ACL 2023
9. **Nevasini Sasikumar**,Krishna Sri Ipsit Mantri, "**Lending a Listening Ear: Generating Suitable Soundscapes for Classic Silent Movies**" accepted for poster presentation at Computational Cameras and Displays Workshop at CVPR 2023
10. **Nevasini Sasikumar**,Krishna Sri Ipsit Mantri, "**Gastro Intestinal Disease Detection Using Transformer Based Image Segmentation**", accepted for poster presentation at the MIT-MGB AI Cures 2023 Conference
11. Krishna Sri Ipsit Mantri, **Nevasini Sasikumar**, "**Synthetic Medical Image Generation Using Latent Diffusion Models and Large Language Models**", accepted for poster presentation at the Medical Imaging with Deep Learning Conference (MIDL) 2023.

PROFESSIONAL EXPERIENCE

Research Intern | **Siemens** | **Autonomous Systems and Control Group** *Sept'23 – Present*
Siemens is a multinational technology company focused on industry, infrastructure, transport, and healthcare

- Working on **Explainable Artificial Intelligence(XAI)** in a multi-modal setting.
- Used **InterpretML** and **Linkedin Fairness** to detect and validate the models post training.
- Gained a deep understanding of explainability, robustness, and fairness of **black-box and white-box models.**

Research Intern | **Cross Labs, Japan** | *Sept'23 – Present*
Cross Labs is a diverse interdisciplinary group pursuing fundamental intelligence research at the frontiers of human knowledge.
* Working on **Retrieval Augmented Generation** using Large Language Models(LLMs).
* **Increased** response generation speed by **32%** using sophisticated similarity techniques.
* Built a **pipeline** for dynamic changes in document for every update, improving **agility** and **quality**

Technical Intern | **Adobe** | **Adobe Customer Solution** *Jun'23 – Aug'23*
Adobe is changing the world through digital experiences through Generative AI
* Automated the vendor platform portal for Global Resource Management team using Artificial Intelligence (AI).
* Seamless work in making the portal highly secure and versatile.
* Reduced manual work for Human Resource(HR) personnel by **60** percent.

Research Intern | **Intel Corporation** | **Vertical Solutions Group** *Jun'22 – Dec'22*
Intel is one of the world's largest semiconductor chip manufacturers by revenue.
* Worked on Continual Learning on a federated setting particularly **Class Incremental scenario.**
* Focused on meta-learning, few-shot learning, and other techniques for image classification.
* Reduced time required for computation by significantly half.

Scholastic Achievements

* Reviewer for **ICML 2023** Workshops - SPIGM, GenLaw, NCW (*2023*)
* Reviewer for **CVPR 2023** Workshop on TAG in Pattern Recognition with Applications Workshop (*2023*)
* Recipient of DEI Award along with travel grant to attend **CVPR**, **ICCV** (*2023*) .
* Recipient of academic scholarship for various semesters (*2023*)
* Won first place for best Poster Presentation on "Polyaniline/ - Al2O3 nanocomposite preparation, characterization, ACT Electrical, and EMI shielding properties" at the **8th National Student Symposium on Physics** (*2021*)
* Won the Second place in **Nokia University Innovation Conclave** 2021.
* I am a part of **Microsoft** Learn Student Ambassador Program. (*2021*)
* Secured an **Top 0.5 percent** in JEE Mains (Engineering) among 1.3 million candidates (*2020*)

Technical Skills

Frameworks: Tensorflow - Keras | Pytorch | BERT | Simple Transformers (Hugging Face) | Sentence Transformers (SBERT)|NLTK
Databases: MongoDB (PyMongo) | MYSQL| PostgreSQL | Amazon Relational Database Service
Programming Languages: Python | Java | Rust | C++
Web Development: HTML | CSS | JavaScript | Angular | Flask

Key Technical Projects

Skeleton Merger for Unsupervised Aligned Keypoint Detector
* Detecting aligned 3D key points using an unsupervised detector based on an autoencoder architecture, further optimizing the detector to be more robust to noise and subsampling.
* Novel method involved iteratively refining the detector through optimization techniques aimed at improving its resilience towards both noise and subsampled data.

Breast Histopathological Detection
* Built a state-of-the-art CNN model, performing end-to-end phase of data prepossessing, feature extraction, model training, evaluation, and deploying.
* Achieved a significance performance improve by almost around **96 percent** in accuracy and MAP score.

Question Answering Model
* Focused on building a model to generate more contextually relevant, coherent, and faster output.
* Used the Stanford Question Answering Dataset (SQuAD) dataset for training. Got the best results with the simple T5 package, evaluated other transformers such as BERT and its variants, along with SpanBERT, DistilBERT, TinyBERT.