Nevasini Sasikumar

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EDUCATION

Bachelor of Technology in Computer Science and Engineering   Bangalore, India | 2020-Present
SPECIALIZATION IN ARTIFICIAL INTELLIGENCE/MACHINE LEARNING, CGPA: 8.16/10
 Coursework: Data Structures and Algorithms; Deep learning; Statistics for Data Science; Advanced Machine Learning

WORK EXPERIENCE

INTEL CORPORATION | RESEARCH INTERN   Bangalore, India | June 2022

- Working on Continual Learning on a federated setting **Class Incremental scenario**
- Focusing on meta-learning, few shot learning and other techniques for image classification.
- Looking at efficient federation across all edge nodes with least memory compute

IIT-MADRAS,INDIAN INSTITUTES OF TECHNOLOGY (RBCDSAI) | RESEARCH INTERN   Madras, India | February 2022

- Designed and implemented a Doubt Generation Model using **Transformers** and **Deep Learning**
- Experimenting with various transformers like GPT, T5 and BERT.
- Also tried to implement Reinforcement Learning into this doubt generation model, under the guidance of professor **Balaraman Ravindran**.

PROJECTS

SKELETON MERGER: AN UNSUPERVISED ALIGNED KEYPOINT DETECTOR ↗ PYTORCH, 3D COMPUTER VISION
Detecting aligned 3D keypoints using an unsupervised detector based on autoencoder architecture, further optimising the detector to be more robust to noise and subsampling

BREAST HISTOPATHOLOGICAL DETECTION ↗   PYTHON,PYTORCH, CNNS, DEEP LEARNING
Used a CNN model for training, the dataset composed of about 22k images in total. Implemented end to end phase of prepossessing, data cleaning, feature extraction, model training,predicting and finally deploying. Obtained an accuracy of 96 percent. Explored different backbones like ResNet , AlexNet and VGGNet

QUESTION ANSWERING MODEL ↗   MACHINE LEARNING,NLP
Focused on building a model to retrieve the answer to a question from a given text/context, which is useful for searching for an answer in a lengthy document. Used the Stanford Question Answering Dataset (SQuAD) dataset for training. Got best results with T5 transformer, precisely the simple T5 package. Used other transformer such as BERT and its variants including SpanBERT, DistilBERT, TinyBERT

REAL TIME AI GESTURE RECOGNITION WITH TENSORFLOW.JS + REACT.JS + FINGERPOSE ↗ ML/AI
Deep learning powered computer vision based gesture recognition. Using Tensorflow.JS and fingerpose, built a gesture recognition models to control web applications. By leveraging the fingerpose javascript library and React.JS to build a real time gesture recognition app.

PUBLICATIONS

- **Nevasini Sasikumar**, Krishna Sri Ipsit Mantri, "**STAGCN: Spatial-Temporal Attention Based Graph Convolutional Networks for COVID-19 Forecasting**", *accepted for oral presentation at the 1st Machine Learning for Global Health Workshop*, **ICLR 2023** ↗
- **Nevasini Sasikumar**, Krishna Sri Ipsit Mantri, "**Underfitting and Regularization: Finding the Right Balance**", *under review at the **ICLR Blog Track 2023***
- Krishna Sri Ipsit Mantri **Nevasini Sasikumar** "**AVGAE: Attention Based Variational Graph AutoEncoder**", *under review at the **ICLR Tiny Paper Track 2023***
- Krishna Sri Ipsit Mantri **Nevasini Sasikumar** "**High-Resolution Virtual Try-On and Fashion Content Generation Using LLMs and Latent Diffusion Models**", *under review at the Workshop on Computer Vision for Fashion, Art, and Design**CVPR 2023***

- Nevasini Sasikumar "Discrete Local Attention Based Big Transfer (DLABiT)", *under review at Women in Computer Vision Workshop* **CVPR 2023**
- Krishna Sri Ipsit Mantri **Nevasini Sasikumar** "Re-implementing TimeSformer for Video Classification", *under review at International Workshop on Large Scale Holistic Video Understanding* **CVPR 2023**
- Krishna Sri Ipsit Mantri **Nevasini Sasikumar** "OOD Detection using ViT Based EBMs", *under review at Generative Models for Computer Vision* **CVPR 2023**

SKILLS

Deep Learning: Natural Language Processing (NLP) | Time- Series Analysis | Sequence Learning | Sequence to Sequence Networks
Frameworks: Tensorflow - Keras | Pytorch | BERT | Simple Transformers (Hugging Face) | Sentence Transformers (SBERT)|NLTK
Databases: MongoDB (PyMongo) | MYSQL

EXTRA-CURRICULARS AND ACHIEVEMENTS

- Won the 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.
- Active member in Women Who Code community and contributed more than 100 hours at **HelpAge India**.