Gunjan Aggarwal

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INTERESTS

Computer Vision, Generative Models, Creative AI, NLP

EDUCATION

GEORGIA TECH
MS in Computer Science | ML Specialization with Thesis
Aug. 2021 - Present | Atlanta, GA
Expected May 2023

BITS PILANI
B.E. (Hons.) in Computer Science
2014-2018 | Pilani, India

COURSEWORK

GRADUATE
Deep Learning, Machine Learning with Limited Supervision

UNDERGRADUATE
Data Mining, Information Retrieval, Probability and Statistics, Data Structure & Algorithms

ACHIEVEMENTS

ADOBE MAX SNEAKS
One of the 11 presenters Adobe wide to present my work on multi-conditional image generation at Adobe MAX SNEAKS, 2019 Video link

GOOGLE CODE JAM
Achieved a global rank of 27 in "Code Jam to I/O for Women" and got invited to attend Google I/O, 2018

SKILLS

Python • C++ • Java
PyTorch • OpenCV • Scikit-learn
Numpy

POSITIONS

Founding member of Association for Computing Machinery - Women Chapter (BITS ACM-W)

EXPERIENCE

GEORGIA TECH | Graduate Researcher under prof. Devi Parikh
Aug 2021 – Present | Atlanta, USA
- Working in the domain of creative AI

ADOBE | Software Development Engineer-2
July 2018 – Aug 2021 | Noida, India

- Helped build the chatbot-framework from scratch, starting with Microsoft LUIS and Rasa, and moving on to designing in-house multi-lingual intent classification engine by utilizing embedding obtained from Google's Universal Sentence Encoder (USE)
- Applied HDBSCAN clustering on top of embeddings of low-confidence user utterances to identify new intents
- Worked on a PoC for designing a zero-shot pipeline for user intent identification using pre-trained BART model which alleviated the need to re-train model over each new intent

ADOBE | Intern
May 2017 - July 2017 | Noida, India
- Explored K-SVD algorithm for compressing raster images of PDF

YRALS DIGITAL | Intern
May 2016 - July 2016 | Mumbai, India
- Worked on detection of quotes and the speaker in an article

PUBLICATIONS

CFINEGAN: UNSUPERVISED MULTI-CONDITIONAL FINE-GRAINED IMAGE GENERATION | NeurIPS Workshop, 2019 | Paper link

- Developed a multi-conditional image generation pipeline in an unsupervised way using a hierarchical GAN framework
- Given a texture and a shape image, the pipeline generates an output that preserves the shape of first and texture of second input image
- The proposed approach qualitatively outperformed the prior approaches over several benchmark datasets like CUB-200-2011 and Stanford Dogs

ON THE BENEFITS OF MODELS WITH PERCEPTUALLY-ALIGNED GRADIENTS | ICLR Workshop 2020 | Paper link

- Proposed to use the models adversarially trained with low perturbation bound for zero-shot tasks, as such models have interpretable gradients and their performance does not drop over clean images

NEURO-SYMBOLIC GENERATIVE ART: A PRELIMINARY STUDY | ICCC Short Paper 2020 | Paper link

- Proposed a new genre of art: neuro-symbolic generative art (NSG). A progressive GAN was trained over a symbolically generated dataset
- Evaluated the creativity of NSG vs the creativity of the original symbolic data through human studies

DANCE2MUSIC: AUTOMATIC DANCE-DRIVEN MUSIC GENERATION | Under Submission | Paper link

- Proposed an approach to generate music conditioned on dance in a real-time fashion
- Proposed an offline approach to generate a paired dance and music dataset which was then used to train a deep neural network
- Human subjects favoured our approach more than other baselines