Anshumaan Chauhan

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EDUCATION

University of Massachusetts Amherst, United States 2022-2024

Master of Science (MS) in Computer Sciences GPA- 3.93/4

- Relevant Coursework: Algorithms for Data Science, Systems for Data Science, Machine Learning, Artificial Intelligence, Natural Language Processing, Reinforcement Learning, Software Engineering, Neural Networks

BITS Pilani Dubai Campus, United Arab Emirates 2018-2022

Bachelor of Engineering (B.E.) in Computer Sciences GPA – 9.83/10

- Awarded merit scholarship of 64,640 AED on total fees based on my GPA.
- Awarded Bronze Medal for an outstanding academic performance and standing third amongst the batch of 2018.

WORK EXPERIENCE

Florida Institute of Technology, United States - *Machine Learning Researcher* 2022

- Analyzed and extracted the representation of the specifications in a subset of English language using Natural Language Processing (NLTK library) and designed a compiler for translating it to AADL.
- Proposed an approach using Double Deep Q Networks for the automated generation of Convolutional Neural Network architectures, minimizing the scalability and time complexity problems without having effect on Search Space by implementing One Shot Training and Prioritized Experience Replay.

Tata Communications, India - *Software Engineer Intern* 2020

- Developed automated system in Python using Flask, Urllib and requests libraries/frameworks, improving the customer targeting and user experience based on clicks per second and user heatmap on the website.
- Performed cross functional evaluation and strategy testing along with a team of 5 developers and marketing analysts, increasing the SEO rankings of the websites while reducing hosting costs and marketing spend by >14%.

PROJECTS

Guided Conditional Image Generation with Conditional Flow Matching 2023

- Integrated Conditional Optimal Transport into an attention-based UNet model, ensuring proficiency in both conditional and unconditional image generation tasks with a unified model using Classifier Free Guidance (CFG).
- Employed the BLIP2 FLAN T5 model for image captioning, addressing descriptive limitations of the CIFAR10 dataset.
- Achieved FID scores of 105.54 for unconditional generation and CLIPScore/FID scores of 22.19/385.56 for conditional generation.

Visual Story Telling 2023

- Developed Visual Story Telling framework to address issues in story generation with large language models like GPT2, GPT3, PaLM, and Llama, focusing on coherence and consistency.
- Fine-tuned text generation models (DistilGPT and T5) on a custom dataset called Plot Summary Dataset, leveraging content conditioning and hierarchical story generation methods.
- Utilized Stable Diffusion models for sentence-by-sentence visual conversion based on the generated stories, highlighting limitations such as T5 model repetition, generation of new characters not in input, impact of PEFT methods on downstream task performance, and the inability of Stable Diffusion models to perform scene transitions.

Recipe Infusion 2023

- Developed Recipe Infusion framework with Recipe Generation and Style Transfer components.
- Fine-tuned DistilGPT model on GPU for 15 epochs after preprocessing and concatenating the RecipeNLG and RecipeBox datasets, resulting in improved BLEU and Perplexity scores compared to the non-finetuned model.
- Implemented Style Transfer for celebrities, including Donald Trump, Taylor Swift, William Shakespeare, and Michael Scott, training T5-small models on synthetic datasets and Shakespeare's parallel corpora, showcasing the effectiveness of rephrasing recipes in a specific style.

Programming Languages – Python, Java, HTML, CSS, TypeScript, Lex, Yacc

Tools/Frameworks – PyTorch, TensorFlow, MySQL, Tableau, AWS, Git, Postman, Spring, Angular, Docker, Airflow