

## 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. **Minimized** 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, to **improve 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, to **increase 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.

Patient Tracker System

2023

- Developed a comprehensive Patient Tracker System for **efficient medical information management**, featuring user-friendly interfaces for doctors and staff.
- Implemented Angular for the frontend, Spring Security and Java's Spring Boot for the backend, and MySQL for the database, **ensuring a secure and scalable system**.
- Incorporated **real-time email notifications, JWT token authentication, and password encryption** for robust security; validated through a usability survey with **over 75% positive feedback** and load testing showing **impressive response times** even under consecutive requests.

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 – MySQL, Amazon Web Services (AWS), Git, Postman, Spring, Apache Maven, Apache Ant, Angular