Danishjeet Singh

singhdan@iu.edu | (812) 803-5457
singhdan.me
Linkedin: danishjeetsingh
Github: danishjeetsingh

EDUCATION

INDIANA UNIVERSITY Bloomington, IN
Luddy School of Informatics, Computing, and Engineering *May 2024*
Bachelor of Science in Computer Science GPA: **3.6**
Minor: Data Science, Statistics

TECHNICAL & LANGUAGE SKILLS

Programming Languages: Python, JavaScript, Java
Tools: R, React, MongoDB, PostgreSQL, HTML, TailwindCSS

EXPERIENCE

Observatory on Social Media, Indiana University Bloomington, IN
Research Assistant *January 2023 - Present*

- Implemented a comprehensive Twitter data collection system, including building a Twitter streamer, data storage, and image processing with multiprocessing, showcasing strong technical skills in data collection and processing.
- Conducted cutting-edge research in computer vision, creating various image datasets to develop novel methods for identifying bots with GAN-generated human faces, demonstrating expertise in image analysis and machine learning techniques.
- Managed a team of 5 graduate students in developing a deep learning-based approach utilizing advanced architectures like Mask R-CNN to identify GAN-generated human faces, showcasing strong leadership and mentoring skills.

IU Computer Vision Lab, Indiana University Bloomington, IN
Research Assistant *May 2022 - Present*

- Conducting research on the application of Deep Learning techniques, including Convolutional Neural Networks(CNN's) and Generative Adversarial Networks(GAN's), for object and image recognition.
- Applying various dimensionality reduction techniques to analyze the relationship between the size of training datasets and the performance of classifiers, using visualizations to facilitate understanding.
- Developing GANs and implementing a Class-to-Class Variational Auto-encoder to enhance the creativity of generated samples.

PROJECTS

GAN for MNIST Dataset (PyTorch, Matplotlib)

- Prepared and split the MNIST dataset of 60000+ images into training, validation and testing sets.
- Initialized and trained the Generator and Discriminator CNN's to generate and classify generated image results as real or fake.
- Achieved a accuracy of 85% while deploying the Generative Adversarial Network.

Geodata Visualization Project (Python, JavaScript, SQLite)

- Employed Google Places API to find the geodata of 200 locations around the globe using Python.
- Constructed a SQLite Database from the geodata acquired from the Google Places API.
- Converted the geodata JSON present in the Database into a JS file to visualize relevant data onto an interactive map.

Twitter Sentiment Analyser (Python, Tweepy, TextBlob, Pandas)

- Utilized Twitter API to fetch 200+ tweets of popular twitter handles around the globe using Python.
- Built and cleaned a Pandas Dataframe and calculated subjectivity and polarity values of tweets using Tweepy
- Performed Sentiment Analysis using the Pattern Analyzer algorithm to further study the relationship of tweets with NLP.

Bankist App (JavaScript)

- Conceptualized and formulated the idea, digital assets and product cycle of a simulated banking app.
- Established a marketing website along with a prototype of the banking app using JavaScript to generate advertisement and user activity and gained over 200+ visits.

ACTIVITIES

Google Developer Student Club, Indiana University Bloomington, IN
Technical Lead/ Core Team Member *September 2021 - Present*

- Delivered engaging machine learning lectures, covering SVM, CNN, and other architectures, and created hands-on image classification projects with PyTorch, showcasing strong communication, pedagogical, and technical skills.
- Introduced advanced topics like style transfer and GANs, providing students with exposure to cutting-edge techniques, demonstrating a deep understanding of modern machine learning advancements.