JITESH PABLA

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EDUCATION

Master of Science - Computer Science **Expected May 2021**
Arizona State University, Tempe, AZ GPA: 3.93/4.0

Bachelor of Technology (with honors) - Computer Science and Engineering **May 2019**
Jaypee Institute of Information Technology (JIIT), Noida, India CGPA: 8.1/10

TECHNICAL SKILLS

Languages: Python, C/C++, SQL, Lua, JavaScript, Java, PHP
Misc: *Tools:* Git, GitHub, Jupyter Notebook, Anaconda, Android Studio, Agile; *Web:* HTML, CSS, JQuery, Vue.js, D3.js, Flask, Bootstrap; *Machine Learning:* NumPy, Pandas, Scikit-learn, Matplotlib, Keras, PyTorch, TensorFlow, OpenCV, NLTK; OS: Linux, Windows;
Certifications: Deep learning specialization - deeplearning.ai (Coursera)

WORK EXPERIENCE

Web Developer, Arizona State University, USA **November 2020 – Present**
- Currently maintaining and editing the websites for different schools within ASU's official domain via Drupal, HTML, CSS, and PHP.
- Migrating the websites from Drupal 7 to Drupal 9 with migration tools, and applying the latest ASU web standards and design.
- Designed and built a new news website - crimeandjusticenews.asu.edu using Adobe XD and Drupal.

Graduate Service Assistant, Arizona State University, USA **January – May 2020**
- Classified 50k COVID-19 articles related to vaccines and therapeutics by scraping Google search results to obtain noisy data and training a scientific-text based Bidirectional Encoder Representations from Transformers (BERT) model called SciBERT.
- Ranked COVID-19 articles for queries relevant to vaccines and therapeutics by utilizing BERT as an embedding generator and finding each article's Cosine similarity with keywords related to vaccines etc., and also by implementing a BM25 + RM3 approach.
- Identified Randomized Controlled Trials (RCTs) from over 50k PubMed articles by modifying the BERT architecture and manipulating its inputs along with various NLP techniques using PyTorch and transformers.
- Implemented a visualization to understand the attention architecture in BERT and the effects of modifications made to it and its inputs.

Participant with LuaRocks -The Lua package manager, Google Summer of Code 2018 **June – August 2018**
- Refactored the core functionalities of LuaRocks commands for - listing, uninstalling, and showing details of packages, searching and installing rocks from the web, opening documentation, linting the rockspec, selecting a rock-tree, etc., to modularize them.
- Programmed a complete Application Programming Interface (API) to provide access to the LuaRocks functionality using Object-Oriented design patterns and used Git extensively for contributing to the main code-base.
- Designed a responsive and interactive web-based GUI using HTML, CSS, Bulma, and Vue.js to give access to the LuaRocks functionality. Interfaced the GUI with the LuaRocks-API in the backend using CGILua.

PROJECTS

Data Driven Disaster Response **August – December 2020**
- Designed an interactive D3.js based dashboard for visualizing the social media data of a city to aid the disaster response during a natural disaster.
- Categorized the social media messages into resource categories using statistical metrics and Latent Dirichlet Allocation (LDA) and applied rule-based sentiment analysis using NLTK.
- Developed a set of interconnected visualizations including - line-charts, pie-charts, heat-maps, etc. to view the frequency of a resource need or a particular emotion in any part of the city during any time.

Clinical Semantic Textual Similarity (STS) **August – December 2019**
- Preprocessed the clinical text to remove stop words, punctuation, etc., and utilized various word2vec pre-trained models to extract token embeddings in order to create a single vector representation for each sentence.
- Fine-tuned multiple BERT models on the given STS dataset and extracted vector representation for each sentence.
- Engineered several similarity features based on the extracted sentence vectors and applied gradient boosting regression to achieve a Pearson correlation greater than 0.84 between the ground truth and the model's predictions.

Text-to-face generation **August 2018 – May 2019**
- Investigated and summarized various methods for facial image generation using a text description of a face.
- Collected a dataset of text descriptions of hundreds of images from the Labelled Faces in the Wild (LFW) dataset and utilized word2vec to create text embeddings.
- Programmed a Keras implementation of StackGAN (a variation of Generative Adversarial Networks) with Convolutional Neural Networks (CNN) and trained it to generate facial images using the collected dataset.