PARTH SHAH

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Summary

I am a graduate student at University at Buffalo, looking at a Machine Learning major along with supplementary courses in Algorithms and Data Science. My ongoing projects include learning the effect of attention models used for machine translation on Genderbias. I am currently taking Deep Learning and Data Model and Query Language courses. My previous courses were Algorithm Analysis, Intro to Machine Learning, Computer Security and Information Retrieval, Advanced Machine Learning, Distributed Systems, Sequential and Parallel Algorithms.

Skills

Algorithms
Android Development
Vuforia Unity 3D
Wordpress
Machine Learning

PROGRAMMING LANGUAGES

Java
Python
C/C++
HTML
JavaScript
CSS
XML
XQuery
MySQL

LIBRARIES

p5.js
Tensorflow
Keras
PyTorch
SOLR
Processing
Firebase
SOLR

Education

University at Buffalo, The State University of New York — Sept. 2018 to Feb. 2020
Masters of Science Computer Science Engineering 2020

Vidyalankar Institute of Technology, Mumbai University — June 2014 to Mar. 2018
Bachelor of Engineering Computer Engineering 2018

Relevant Experience

Intern – Technical Team — Mumbai, India
Cloud Counselage Pvt. Ltd, — Mar. 2018 to July 2018

- Handled technicalities for various SaaS Cloud products such as Edpedia – The Learning Management System, Job Cloud – The Online Job Board, Directory Cloud – The Online Business Directory Services & B2B Market Place.
- Created the skeleton for the android application for the company and its version control. Maintaining company website and increased server performance by 30% by migrating to GCP.

Intern – Android App Development — Mumbai, India
FP Design - Part of Frischmann Prabhu India Pvt Ltd — Sept. 2017 to Feb. 2018

Project: Augmented Reality Based Virtual Furniture

- Designed an Augmented Reality (AR) based application which can be used to visualize life-size furniture in your room using your phone camera.
- Coalesced a feature which allows customers to customize furniture according to color/texture of their choice using barcodes from the catalogue.
- Used Unity and Vuforia for the AR part and Blender to create the 3D models as requested by the company.

Relevant Projects

Sequence to Sequence Machine Translation and Gender Bias Analysis — Feb. 2019 to June 2019

- Designed a multilayer bi-directional LSTM Recurrent Neural Network Model divided in three parts Encoder, Attention and Decoder and used it for translation from German to English using seq2seq and then analysed on the basis of gender bias.
- Trained and tested the model on the data from the Europarl v7, Common Crawl, and News Commentary v11 corpora from WMT '16. Produced a BLEU Score of 27.6 for 2 layers and 28.7 for 4 layer models comparable to the original paper.
- Took a sample of 100K sentences with BLEU score over 0.9 for Gender Bias analysis found that 30% of sentences have an error with respect to gender.

Amazon Dynamo-style key-value storage — Mar. 2019 to Mar. 2019

- Devised a simplified version of Amazon Dynamo in an android group messenger application for up to 5 nodes with an easily scalable architecture.
- Reproduced three features of Dynamo viz:- 1) Partitioning, 2) Replication, and 3) Failure handling.
- Assured both availability and linearizability at the same time with a 99% success rate over-vigorous testing under multiple failures and requests at a time.

Forensic pattern recognition using Explainable AI — Feb. 2019 to Feb. 2019

- Annotated a dataset of handmade features for a total of 13570 'AND' images consisting of 15 features.
- Generated multiple PGM's from intuitive feature selection and hill-climbing made into Bayesian Models and Markov Models using pgmpy in python.
- Created a Siamese Neural Network to learn a representation of features from the 'and' images used to predict pairs using patterns learnt from them. Achieved an accuracy of 74%
- Built an AutoEncoder to learn the same pattern as in the Siamese Network so as to compare the accuracies using the same 'AND' image pairs. Achieved an accuracy of 91%.
- Built a Multitask Learning (MTL) model to learn the mapping between “AND” images and handcrafted features, using the AutoEncoder latent features and 15 Neural Networks customized to each different feature of the image.

Unpaired Image-to-Image Translation with Conditional Adversarial Networks — Apr. 2019 to Apr. 2019

- Implemented CycleGAN Model to show emoji-style transfer between Apple<->Windows emoji style.
- Assembled a 3 layer model with a Deep Convolution GAN, trained using the cyclic consistency loss with a CycleGAN discriminator.
- Trained and Tested with 2000 emojis of both styles using multiple settings obtaining significantly improved results over other standard Generative Models

!404 - An Information Retrieval System — Oct. 2018 to Nov. 2018

- Deployed a Full-Fledged Information Retrieval System as a part of a final project for the subject Information Retrieval. (https://youtu.be/u1SpF9V1lBY)
- Worked in a group of 4. Responsible for the UI development, World map representation, word cloud generation and overall supervision.

Awards and Certifications

Google partnered with Udacity · Recipient of Google India Challenge Scholarship: Android Developer — Feb. 2018
Google India's association with Udacity, for offering scholarships for aspiring Android developers. 1,000 Challenge Scholarships were given out on selection basis pertaining to the student's performance in the coding round. The Challenge scholarship lasted 90 days.

Coursera · Machine Learning by Andrew NG — Nov. 2018
Coursera Course on Machine Learning by Andrew NG