Subrato Chakravorty

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EDUCATION

University of California San Diego *Sep 2019 - April 2021 (Estimated)*
MS in ECE: **Machine Learning and Data Science** GPA: 4.0/4.0
Courses: Deep Learning for Sequences, Linear Algebra, Statistical Learning 1, Statistical Learning 2, Statistical NLP, Machine Learning for Image Processing

Indian Institute of Technology BHU, Varanasi, India *Jul 2014 - May 2018*
B.Tech in Mechanical Engineering CGPA:9.36/10

EXPERIENCE

Machine Learning Engineering Intern **Twitter Inc.** Jun 2020-Sep 2020

- Modelled the recommendation system for events and trends under the 'For You' tab as a contextual bandits problem.
- Developed a Thompson Sampling based RL approach in tensorflow to solve the contextual bandits problem.
- Enabled training and inference of the proposed solution using Twitter's CDL pipeline.
- Ran a A/B experiment to evaluate the efficacy of the proposed approach over the existing solution.

Machine Learning Engineer **Wipro Limited, India** Jun 2018-Jul 2019

• Researched and implemented a Anomaly Detection tool that models time-series data of system logs as a language modeling problem using LSTM networks and flags deviations from expected behavior. Achieved 99.6% accuracy on HDFS logs.

• Designed and developed a tool that identifies defect prone areas in an application using hierarchical density-based spatial clustering after dimensional reduction on high dimensional representations of text data.

Software Development Intern **Nanopix ISS, India** May 2016 - Jul 2016

• Revamped an open-source C++ library for raspberry-pi to capture images minimizing frame loss. Reduced frame loss from 1 in 100 to 1 in 10000.

TECHNICAL STRENGTHS

Areas of Interest - Machine Learning, Deep Learning, Recommendation Systems, Natural Language Processing, Computer Vision, Data Structures and Algorithms, Probability and Statistics
Software Proficiencies - C, C++, Python, keras, TensorFlow, PyTorch

SELECTED PUBLICATIONS

• W Yang, G. Zeng, B. Tan, Z. Ju, **S. Chakravorty**, et al. "On the Generation of Medical Dialogues for COVID-19", arXiv:2005.05442

• **Subrato Chakravorty** and Debdas Ghosh, "Nash equilibrium strategy for non-cooperative games with interval type-2 fuzzy payoffs", IEEE International Conference on Fuzzy Systems (FUZZ-IEEE), IEEE WCCI, Rio de Janeiro, 2018, pp. 1-8.

SELECTED PROJECTS

• **LipReading using Transformers:** Built a encoder-decoder based end-to-end automated lip reading model which given a sequence of facial images, outputs the corresponding transcriptions. Employed a modified DenseNet3D front end to to extract features from individual frames along with transformer layers to exploit temporal relationships to finally produce the text transcription.

• **Image Segmentation using Densenet:** Developed a custom DenseU-net architecture which used dense blocks instead of traditional convolutional blocks in the U-net architecture to perform semantic segmentation on axial CT images of Covid-19 patients. Improved significantly on the U-net baseline.

• **Text Summarization using LSTMs:** Built a sequence-to-sequence model for abstractive text summarization using Bidirectional LSTMs as encoder and a LSTM with attention as decoder. Trained on Amazon Food reviews dataset to learn to predict titles from food reviews. Implemented greedy and beam search for inference.