Jainesh Doshi

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Education

Georgia Institute of Technology, Atlanta, USA *Fall '17 - Spring '19*

Master of Science in Computer Science | Specialization in Machine Learning

Relevant Courses *Deep Learning, Advanced OS, Graduate Algorithms, Natural Language Processing, HPC, Machine Learning, ML for Trading, Artificial Intelligence, Data & Visual Analytics, Stochastic Opt., Convex Opt.*

Indian Institute of Technology Bombay, Mumbai, India *Fall '12 - Spring '17*

Bachelor of Technology & Master of Technology in Electrical Engineering

Specialization in Computer Engineering | Minor in Robotics | Undergraduate Research Award *'17*

Relevant Courses *Adv. Comp Arch, Game Theory, Neuromorphic Engineering, Automatic Speech Recognition, Computer Vision*

Experience

Sr. Applied ML Scientist | JP Morgan Chase, Palo Alto *Fall '19 - Present*

- **Multi-purpose Summarizer**, News Analytics
  - Built **daily report generator summarizing worldwide critical cybersecurity related incidents** to senior executives
  - Developed **(abstractive + extractive) summarizer** for event-centric clustered news articles utilizing **Longformers**
- **Deploying earnings call transcript summarizer** on **aws Sagemaker** for on demand execution optimizing resource usage
- **Leading Silicon Valley SWE Program** by mentoring new recruits, hosting showcase events & fireplace chats with leaders
- **Deep X - Time Series Forecasting**, Quantitative Research
  - Developed **LSTM based models** to **predict returns** for 1100 equities across markets handling **$15 million USD** a day
  - Built a real world analogous stock market simulation environment with Limit Order Book & trade queues and trained **model based RL agents** to **optimize trade breakdown** and **execution**
  - Devised model regulatory approval strategy & **formulated metrics** to analyze **model performance** & **signal persistence**
  - Implemented, optimized **feature extraction** & **inference pipeline** for DNN models, random forests & baselines
  - Investigated **multi-step** and multi-horizon **prediction** for non-stationary time series using encoder-decoder models

Automated Story Generation | *Graduate Researcher, Prof. M. Riedl,* Georgia Tech *Spring '19*

- Facilitated interactive storytelling between human and AI agent using a combination of **sequence models** and **RL**
- Developed & optimized the pipeline (30% faster) to train the **DQN model** and test it on subjects in real time

Efficient Training of DNNs | *Machine Learning Intern,* Wave Computing *Summer '18*

- Developed an algorithm for **accelerating training schedule** of DNNs using **pretrained shallower modular networks**
- **Reduced training iterations of ResNet-18 by 50%** by optimally utilizing information from pretrained Residual blocks
- **Achieved 6.9% validation error** on CIFAR10 with ResNet-110 trained on **12 bits precision** ***(NIPS 2018 Submission)***

Google Summer of Code | *Remote Software Developer,* ArchC, University of Campinas *Summer '16*

Projects

Genre & Style Transfer for Music | *Deep Learning* *Fall '18*

- Attained **73% top1 accuracy** (GTZAN) on **genre recognition** for short clips using shallow CNNs with larger kernels
- Achieved similar content & style losses on style-transferred music as compared to DNNs trained on spectrograms

MapReduce Framework | *Advanced OS* *Fall '18*

- Implemented Mapper and Reducer functionalities that could be executed in parallel on distributed systems
- Utilized **asynchronous calls on gRPC** to process communication between master and Mapper/Reducer workers
- Added capability to **handle straggled workers** in the threadpool thereby maintaining performance for larger datasets

Syntactic Dependency Parsing | *Natural Language Processing* *Spring '18*

- Implemented **BiLSTM-CRF model** in PyTorch for **Part-Of-Speech Tagging** on news articles in English & Norwegian
- Developed an **arc-standard transition based parser** that utilizes neural networks for choosing actions & embeddings

Public Transit Network Planner | *Data and Visual Analytics* *Fall '17*

- Created an **interactive visualization** to **add identified & custom stops** to generated optimal transit routes **within budget**
- Implemented **mean-shift clustering** to generate stops and utilized the **Ant-Colony Optimization technique** for routing

Proficiency

Languages	Python, C, C++, R, JavaScript, html, Scala, SQL, cypher
Frameworks	PyTorch, Tensorflow, UNIX, MATLAB, CUDA, OpenCV, Hadoop, Spark