Nitish Kulkarni

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EDUCATION

- **Carnegie Mellon University, School of Computer Science** *Pittsburgh, PA*
  Master of Computational Data Science | **CGPA: 4.06** (4+ Grading Standard) *Aug 2017 - Dec 2018*
- **Indian Institute of Technology Madras** *Chennai, India*
  B.Tech. & M.Tech., Electrical Engineering; Minor: *Economics* *Aug 2009 - Jul 2014*
  CGPA: 9.13/10 (Minor: **9.4/10**), Rank: **2/24**

PROFESSIONAL EXPERIENCE

- **Applied Scientist Intern, A9.com, Palo Alto** (*Digital Relevance, Amazon Search*) *May 2018 - Present*
  - Working on personalizing search for Amazon's digital content using low-latency machine learning algorithms
- **Associate, Goldman Sachs, Bengaluru** (*Fixed Income Strats, Investment Management Division*) *Jan - May 2017*
  - Built trading strategies using anomaly detection techniques, dimensionality reduction and linear regression models
  - Designed & built research tools for computing risk metrics, analyzing statistical properties and backtesting trading strategies
- **Quantitative Analyst, Goldman Sachs, Bengaluru** (*Fixed Income Strats, Investment Management*) *Jun 2014 - Dec 2016*
  - Modeled the impact of economic data releases and business cycles over financial assets using linear regression and SVMs
  - Developed infrastructure to aggregate terabytes of data and reflect real-time trades consistently across multiple geographies
  - Managed an intern, conducted on-site technical interviews and was involved in on-campus recruiting
- **Data Science Intern, DataSigns Technologies, Bengaluru** (*Data Analytics and Credit Modeling*) *May - Jul 2017*
  - Devised a credit underwriting model based on logistic regression to predict the likelihood of loan defaults
- **Software Engineering Intern, Qualcomm Inc., Bengaluru** *May - Jul 2013*
  - Extracted the top critical paths for a digital circuit using graph traversal algorithms and Monte Carlo simulations
- **Electrical Engineering Intern, Texas Instruments, Bengaluru** *May - Jul 2012*
  - Developed a probabilistic technique for estimation of *Soft Error Rate* to achieve 94% accuracy against simulations
- **Product Development Intern, Harness Handitouch Pvt. Ltd., Chennai** *May - Jul 2011*
  - Designed and built an FTIR-based multitouch surface; won the *Best Inten Award*

PUBLICATIONS

- **Nitish Kulkarni***, Vasu S*, Srividya Pranavi*, G. Bayomi*, Eric Nyberg, Teruko M., "**BioAMA: Towards an End to End BioMedical Question Answering System**", Annual Meeting of the Association for Computational Linguistics (ACL), BioNLP track, Melbourne, Australia 2018 *2018*
- [Submitted] **Nitish Kulkarni***, Mansi Gupta*, Danish D.*, Graham Neubig and Eduard Hovy, "**Interpreting Information Encoded in Neural Models for Language Tasks with Application to Transfer Learning**", Conference on Empirical Methods in Natural Language Processing (EMNLP) 2018 *2018*

PROJECTS

- **Explicable Question Answering for Consumer Products** *Jan 2018 - Present*
  - Implemented hierarchical attention-based sequence to sequence models for generating answers conditioned on product reviews
- **Automatic goal generation for Hindsight Experience Replay in mutli-goal RL** *Jan - May 2018*
  - Proposed and implemented generative models for sample-efficient experience replay in multi-goal deep reinforcement learning
- **End-to-end vs modularized Question Answering systems for multiple question-type corpora** *Jan - May 2018*
  - Built heuristic-based as well as deep QA systems for BioASQ and MS MARCO datasets, analyzed relative merits & demerits
- **Question Relevance in Visual Question Answering** *Aug - Dec 2017*
  - Curated a large dataset; trained deep CNN and LSTM based models for assessing if a question can be answered by an image
- **Zero Shot Learning of Vectorized Sketch Images** *Aug - Dec 2017*
  - Built deep generative RNN models to draw sketches from unseen images; devised dynamic time warping based evaluation
- **Modeling of glitching effects in estimation of dynamic power consumption** *Jul 2013 - Jun 2014*
  Master's Dissertation, Department of Electrical Engineering, IIT Madras (Guide: Dr. Nitin Chandrachoodan)
  - Implemented Monte Carlo analysis, graph-based algorithms and density estimation techniques to identify high glitch nets

COURSE WORK & SKILLS

CMU - Machine Learning (PhD), Deep Learning, Deep Reinforcement Learning, ML with Large Datasets
- Neural Networks for NLP, Question Answering, Search Engines, Structured Prediction for Language

Teaching Assistant - Machine Learning with Large Datasets, Math Foundations for Data Science, Data Structures and Algorithms

Programming - Python, C, Java, Matlab, R, Octave, Shell, Perl

Tools/Frameworks - PyTorch, TensorFlow, Keras, Spark, Hadoop, Scikit-learn, Pandas, MapReduce, MongoDB, SQL

*denotes equal contribution