Aaditya Prakash (Adi)

aprakash@brandeis.edu, iamaaditya.github.io

Blog 🔊, Github ⌨, Scholar 🎓, LinkedIn 💼, Twitter 🐦

RESEARCH		
Current: Model parallelism in CNNs, Defense against robust adversarial attacks		
Past : Paraphrase Generation ↗, Applications of Memory Networks in NLP ↗	Advisor: Sadid Hasan
Semantic Image Compression using CNN↗, Visual Question Answering ↗	Advisor: James Storer
Computational Fact Checking with Retrospection ↗	Advisor: Liuba Shrira

EDUCATION		
PhD, Computer Science, Brandeis University. Advisor: Prof. James Storer ↗	Current
MA, Computer Science, Brandeis University	May 2015
Courses: Algorithms, Distributed Systems, Statistical approaches to NLP	GPA = 4.0/4.0
Computational Semantics, Computational Neuroscience, Information Retrieval	
BS, Biomedical Engineering, Bharath University, Chennai, India	2004-2008
Courses: Calculus(I, II), Complex Analysis, Numerical Methods, Digital Signal Processing	GPA = 9.36/10
Biostatistics, Medical Physics, Medical Imaging Lab, Modeling of Physiological Systems	Rank = 1/71
Completed 24 MOOC courses from Coursera, Udacity, edX, Harvard Business School	2012 − 2013
Machine Learning (Ng), Game Theory, Algorithms, Neural Networks (Hinton), AI (Abbeel)	Certificates ↗

COMPUTING SKILLS

Languages	:	Python, C, C++, CUDA, Matlab
Deep Learning	:	TensorFlow[TF], Keras, PyTorch, Theano, Torch
Research Tools	:	iPython, SciPy, NumPy, NLTK, OpenCV, Git, LaTeX
Big Data Tools	:	Hadoop, MapReduce, MongoDB, Mahout, Spark
Code Samples	:	VQA [Keras] ↗, Multi-structure ROI [TF] Neural Paraphrase Generation [TF]↗
	:	Multi-agent GANs [TF], Fallacy Detector [Haskell] ↗

EXPERIENCE

- Research Intern, Qualcomm Research — Summer 2017
    - Explored model parallelism for convolutional neural networks
    - Architecture learning for reduced model complexity

- Deep Learning Developer (contract), Spin Master™, Canada — Oct-Dec 2016
    - Designed CNN models for fine grained classification of various toys
    - Developed Android App for classification/detection in real-time

- Associate Research Scientist (part-time), AI Labs, Philips Research, Cambridge, MA — 2016 − 2017
    - Use of neural networks for detecting adverse drug reaction, WWW 2017 ↗
    - Clinical text simplification and paraphrase generation, Clinical-NLP COLING 2016 ↗

- Research Intern, AI Labs, Philips Research, Cambridge, MA — Summer 2016
    - Explored applications of LSTM in sequence to sequence learning, COLING 2016 ↗
    - Developed efficient representation of memory state for Memory Networks, AAAI 2017↗

- Big Data Analyst, Brandeis University   Summer 2014

  – Researched various new techniques in data analysis on Hadoop and Spark framework
  – Designed assignments and quizzes for a graduate level course

- Teaching Assistant, Brandeis University   2013-Current

  – Mobile Application Development   – Theory of Computation
  – Scientific Data Processing in MATLAB   – Data Structures
  – Fundamentals of Artificial Intelligence – Introduction to Algorithms
  – Introduction to Big Data Analysis   – Data Compression & Multimedia

- Independent Algorithmic Trading   2010-2012

  – Statistical Arbitrage trades on co-integrated pairs (INFY/TCS, ICICI/IDFC, MRF/Apollo)
  – Low latency Options strategies (Butterfly spread) on Nifty50
  – Designed, developed and programmed several algorithmic strategies as a contractual work

- Senior Systems Engineer, Infosys Limited ⬈   2009-2013

  – Developed new algorithm to visualize large unstructured datasets
  – Implemented various Machine Learning algorithms on Map-Reduce (Mahout)
  – Analyzed various fault measures in distributed optimization problems

- Independent Tutoring, Bharath University ⬈   2007-2009

  – Courses taught: C, C++, Java, Maths [I, II, III, IV], Computer Architecture
  – Taught more than 50 students in batch sizes ranging from 2 to 15

RECOGNITIONS
- Outstanding Teaching Fellow, Brandeis University 2017⬈
- Advisory board member, OneQube ⬈
- Honorable spotlight award, Visual Question Answering Challenge, CVPR 2016 ⬈
- Best paper award at International Conference on Perspective of Computer Confluence, Pune 2012 ⬈
- Gold Medal (for securing highest rank), Bharath University, Chennai 2008

PUBLICATIONS
- PDF⬈   Prakash, Aaditya, et al. Semantic Perceptual Image Compression using Deep CNNs.   IEEE DCC 2017
- PDF⬈   Prakash, Aaditya, et al. Condensed Memory Networks for Clinical Diagnostic Inferencing. AAAI 2017
- PDF⬈   Lee, Kathy, et al. Adverse Drug Event Detection in Tweets with Semi-Supervised CNNs.   WWW 2017
- PDF⬈   Prakash, Aaditya, et al. Neural Paraphrase Generation with Stacked Residual LSTM.   COLING 2016
- PDF⬈   Prakash, A. & Storer, J, Highway Networks for Visual Question Answering,   CVPR (VQA) 2016
- PDF⬈   Prakash, A. Reconstructing Self Organizing Maps as Spider Graphs for better visual interpretation of large unstructured datasets. *Infosys Lab Briefings*, Vol 11.   INFY 2013
- PDF⬈   Prakash, A. Measures of Fault Tolerance in Distributed Simulated Annealing. *Proceedings of International Conference on Perspective of Computer Confluence with Sciences* Vol 1 pp111-114.   PICPC 2012
- PDF⬈   Prakash, A., & Jha, R. K. New Interface Protocol to Connect Multiple Bank Networks from a Single Outlet. *International Journal of Computer Applications, NY, USA*, Vol 55 pp1-9.   IJCA 2012