Aaditya Prakash (Adi)

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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 — Certificates

Machine Learning (Ng), Game Theory, Algorithms, Neural Networks (Hinton), AI (Abbeel)

COMPUTING SKILLS

Languages	:	C, Python, C++, CUDA, Matlab
Deep Learning	:	TensorFlow, 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 [Tensorflow]
	:	Multi-agent GANs [Tensorflow], 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
  - Scientific Data Processing in MATLAB
  - Fundamentals of Artificial Intelligence
  - Introduction to Big Data Analysis
  - Theory of Computation
  - Data Structures
  - Introduction to Algorithms
  - 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

AWARDS

- 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, VQA (CVPR) 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