Abhishek Bhatia

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Education

Columbia University — **New York, NY, USA**
Master of Science in Computer Science, GPA: 3.8/4.0 — *May 2018*
Graduate Teaching Assistant: Neural Networks & Deep Learning and Machine Learning

University School of Information, Communication and Technology — **New Delhi, India**
Bachelor of Technology in Information Technology, First class with distinction — *May 2015*

Technical Skills

Programming: Python ▪ GoLang ▪ Java ▪ C++ ▪ C ▪ R ▪ Matlab ▪ NetLogo ▪ LaTeX

Libraries: TensorFlow ▪ Keras ▪ PyTorch ▪ Caffe ▪ Django ▪ Flask ▪ Twisted

Cloud Platforms: Amazon Web Services ▪ Google Cloud

Experience

Omnee.io, Inc. — **Mountain View, CA, USA**
Software Engineer — *Oct 2018 – Present*
- Lead the development of a backend machine learning pipeline in GoLang shared by 2 teams, resulting in acquisition of more customers.
- Presented analysis on how to find similar patterns among IoT tracking devices, this began as an ambiguous project that I drove to completion and launched new meaningful metrics.
- Mentored team members through weekly meetings to improve the teams overall business knowledge resulting in enhanced interactions with business users and customers.

Blei Lab, Columbia University — **New York, NY, USA**
Research Intern, Jaan Altosaar — *May 2017 – March 2018*
- Developed a generic, efficient method to make reinforcement learning(RL) algorithms more robust by constraining gradient updates of policy parameters. Implemented using tensorflow and pytorch.
- Experiments on various RL environments demonstrated our approach had more stable performance and achieved more exploration and higher average reward. Poster publication at NIPS 2017 with me as the first author. Link

IIT, Delhi — **New Delhi, India**
Project Assistant, Prof. Jayadeva — *Jan 2016 – Nov 2016*
- Developed low complexity classification framework for EEG signals, by minimizing the exact bound on the VC dimension. The proposed approach generalizes better than SVMs with lower error rates, while using less than one-tenth of the number of support vectors.

IIIT, Delhi — **New Delhi, India**
Research Assistant, Prof. Sachit Butail — *Jun 2015 – Dec 2015*
- Built a model to simulates dynamics of changes in perceptual vision field in human crowds in Matlab. Results revealed queuing tendency reduces for crowds with wider vision field which was contrary to the original belief.
- This study was presented as a talk in SIAM Conference on Dynamical Systems, 2017. Link

Graduate Projects

Group Rating Decomposition as a Distribution over Users: Formalized and put forth a novel three step process for decomposing group ratings into a composition of user archetypes. The model implemented in tensorflow was able to predict user ratings within one star of truth. Link

De(warp/nois)ing Images with Conditional GANs: Developed a conditional GAN approach in keras for dewarping images. The analysis discovered why such approaches blur out high spatial frequency components while preserving low spatial components. Link

VideoStyle Transfer System: Designed the back-end engine in Python using AWS, EC2, SQS, SNS and S3, for an application that lets users to convert their video to special styles. Link

Publications

- Proximity-constrained reinforcement learning. NIPS 2017 Workshop, NIPS 2017 Workshop, AABI. Link
- On the role of evangelism in consensus formation. Complex Adaptive Systems Modeling. Link
- A Hybrid Autonomic Computing-Based Approach to Distributed CSPs. MDPI Computers, 2015. Link
- Disk Scheduling using a Customized Discrete Firefly Algorithm. Cogent Eng. 2015. Link
- Genetically optimized ACO inspired PSO algorithm for DTNs. 3rd ICRITO, 2014. Link