Aditya **Vikram**

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Education

Indian Institute of Technology, Kanpur *9.7/10*

B.Tech, Electrical Engineering, Minors in Algorithms and Machine Learning *2014-2018*

Work Experience

Software Development Engineer *Bengaluru, India*

Adobe Systems *July 2018 - Present*

- Implemented numerous components of an integral iOS UI library, used across all Adobe iOS apps
- Architected a process to modularize and deliver individual components of the UI library
- Added support for quiet notifications and background downloading on an Engagement iOS SDK
- Improved performance and launch time of dynamic paywalls, resulting in increased revenue due to greater engagement
- Improved several cloud-controlled features for the in-app messages shown to iOS users
- Implemented a batching+caching mechanism for analytics in an SDK for Universal Windows Platform
- Implemented a retry and re-connection logic around flaky inter-app communication for Universal Windows apps
- Implemented a user-facing request-access workflow for enabling collaboration in cloud documents

Research Intern *Bengaluru, India*

Adobe Systems *May 2017 - July 2017*

- Brainstormed for 2 weeks given the problem area of Virtual Reality websites, read related research papers and chose *"Visualizing and designing a navigable interface for a large-scale image gallery on a 360 canvas"* as our problem statement
- Found novel ways for image layout in virtual reality and implemented it for Samsung Gear VR in Unity
- Formed an Image similarity graph from 150,000 image dataset using a State-of- the-art technique, and wrote a Flask server to host the back-end for image search and nearest neighbor requests
- Minimized the image *retrieval lag* from the server and implemented a *tag-based image search*

Projects

Online MCMC based Bayesian Inference [Report] *Prof. Piyush Rai*

Course Project for **Topics in Probabilistic Modeling and Inference** *Jan'18-Apr'18*

- Performed a survey of Online Markov Chain Monte Carlo methods, important for bayesian inference over a large dataset
- Studied Stochastic Gradient Langevin Dynamics (SGLD) method for online MCMC and the theory of Langevin dynamics
- Studied and implemented Stochastic Gradient Riemannian Langevin Dynamics (SGRLD), an extension of SGLD which overcomes its limitations in constrained settings

Grammatical Error Correction in Sentences [Report] *Prof. Harish Karnick*

Course Project for **Introduction to Natural Language Processing** *Jan'18-Apr'18*

- Implemented a LSTM based sequence-to-sequence (*seq2seq*) model using *keras* to correct grammatical errors in sentences, using LSTMs for encoding and decoding
- Trained and tested the *seq2seq* model on NUCLE dataset with sub-sampling and suggested improvements to improve the accuracy of correction

Brittle ML: Playing Satan *Prof. Purushottam Kar*

Course Project for **Introduction to Machine Learning [Report]** *Aug'17-Nov'17*

- Studied various models of adversarial attacks on Machine learning models, especially convolutional neural nets
- Explored the use of different norms such as l_∞, general l_p and Earthmover distance in limiting the added noise to inputs
- Successfully implemented a blackbox attack on Inception-v3 in Tensorflow to craft adversarial examples for images
- Attempted to break Ranking methods that use decision trees pursuing an approach mentioned in literature

Technical Skills

Languages C++, C++/CX, Objective C, Swift, Typescript, Javascript, Python, Shell, LaTeX

Frameworks/ Tools React, NodeJS, Cocoapods, Git, MATLAB

Relevant Coursework

Introduction to Machine Learning	Introduction to Natural Language Processing	Probabilistic Modeling and Inference
Data Structures and Algorithms	Algorithms-II	Randomized Algorithms
Approximation Algorithms	Convex Optimization†	Probability and Statistics†
Set Theory and Discrete Mathematics†	Deep learning specialization (Coursera)	

† : A* grade (awarded to top 1-2% students)