Pranav Ravindra Maneriker

Personal Data

Current Position:	Member of Technical Staff, Big Data Experience Lab, Adobe Research, India
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Research Interests

Natural Language Processing, Statistical Inference, Data Mining, Deep Learning

Education

Jun 2012 - Jun 2016 **Bachelor of Technology in Computer Science and Engineering**
Indian Institute of Technology Kanpur, India,
Cumulative GPA: 9.2/10.0
Graduated with a minor in English Literature
Undergraduate Project: *"SAT solving on GPUs"* under Prof. Subhajit Roy

Research and Lab Experience

Jun 2016 - Present **Member of Technical Staff**, Big Data Experience Lab, Adobe Research
Worked on problems in Natural Language Processing, Statistics, and Data Mining including summarization, computational creativity, regression modelling, experiment design, hypothesis testing, and frequent item set mining. Also involved in proposing new problems in novel research areas, mentoring interns in these areas, and building research prototypes for various projects.

Jan - Apr 2016 **Tutor, Introduction to Programming**, (under Prof. Sunil Simon, IIT Kanpur)

Aug - Nov 2015 **TA , Data Structures and Algorithms** (under Prof. SK Mehta, IIT Kanpur)

May - Jul 2015 **Research Intern**, Big Data Experience Lab, Adobe Research
Intern for three months in the area of multimedia summarization, developing models, algorithms and prototypes and presenting the work to executives.

Awards and Scholastic Achievements

2012 - 2016 **Aditya Birla Group Scholarship**
Awarded to about 15 students from 160 students across the top Engineering Colleges in the country (IITs and BITS Pilani) on the basis of overall achievements spanning academic and co-curricular excellence.

2013 **Academic Excellence Award**
Top 7% of the batch.

2010 **KVPY Fellowship**
Awarded by the Dept. of Science and Technology, Govt. of India.

2013 - 2014 **International Collegiate Programming Contest**
Regional events at Kharagpur (2013, positioned 22^{nd} of 71 teams) and Amritapuri (2014, positioned 22^{nd} of 250 teams).

2012 **IIT JEE**
Secured an Nationwide Rank of **145** (out of 0.5 million candidates).

2012 **AIEEE**
Secured Nationwide Rank of **39** (out of 1.2 million candidates).

2012 **INSPIRE scholarship**
Nationwide top 1% candidates in CBSE Examinations.

Research Publications

G. Hiranandani, K. Ayush, Atanu R. Sinha, S.V.R. Maram, C. Varsha, and **P. Maneriker**. **"Enhanced Personalized Targeting Using Augmented Reality."** *ISMAR, 2017* (Poster/Short Paper track).
ABSTRACT: We analyze consumer interactions on AR-based retail apps to identify her preferred purchase viewpoint. We then target the consumer through a personalized catalog, created by embedding recommended products in her viewpoint. I was involved in the design and analysis of the study used to validate the viewpoint and recommendation detected by the algorithm.

Atanu R. Sinha, M. Macha, **P. Maneriker**, S. Khosla, A. Samdariya, and N. Singh. **"Anti-Ad Blocking Strategy: Measuring its True Impact"** *KDD conference workshop - 2017 AdKDD and TargetAd*
ABSTRACT: We propose a novel algorithmic method which modifies the difference-in-differences approach to address the sampling bias in the measurement of the effectiveness of anti-ad blocking strategies. Unlike difference-in-differences, we choose the time-period for comparison in an endogenous manner, as well as, exploit differences in ad blocking tendencies among visitors' arriving on a publisher's site to allow cluster specific choice of the control time-period. Evaluations on both synthetic data and proprietary real data from an online publisher show good support.

G. Hiranandani, **P. Maneriker**, and H. Jhamtani. **"Generating Appealing Brand Names"** *Computational Linguistics and Intelligent Text Processing - CICLing, 2017*
ABSTRACT: In this work, we proposed a computational method to generate appealing brand names based on the description of entities using quantitative scores for readability, pronounceability, memorability and uniqueness of the generated names to rank order them. Experimental results show that the names generated by our approach are more appealing than names which prior approaches and recruited humans could come up.

N. Modani, **P. Maneriker**, G. Hiranandani, Atanu R. Sinha, Utpal, V. Subramanian, and S. Gupta. **"Summarizing Multimedia Content"** *Web Information Systems Engineering - WISE 2016*
ABSTRACT: We propose two novel methods - graph based and a modification to a submodular approach - for summarizing multimedia which explicitly recognize desirable, normative characteristics of a summary i.e. good coverage and diversity of the respective text and images, and that text and images should be coherent with each other. We also propose a metric to measure the quality of a multimedia summary. We experimentally demonstrate that the proposed methods achieve good quality multimedia summaries.

Patents

N. Modani, **P. Maneriker**, G. Hiranandani, Atanu R. Sinha, V. Subramanian, Utpal, and S. Gupta. **"Determining quality of a summary of multimedia content"** US Patent number 9454524

N. Modani, **P. Maneriker**, G. Hiranandani, Atanu R. Sinha, V. Subramanian, Utpal, and S. Gupta. **"Multimedia Document Summarization"** US Patent Application number 14/947,964

B.V. Srinivasan, **P. Maneriker**, K. Krishna, C. Huesler, and S. K. Saini. **"KPI specific experience bundling"** provisionally filed at USPTO

P. Maneriker, N. Anandhvelu, V. Gupta, K. B. Raj, **"Detecting Style Breaches in Multi-Author Content or Collaborative Writing**", US Patent Application number 15/812,632

Atanu R. Sinha, M. Macha, **P. Maneriker**, S. Khosla, A. Samdariya, N. Singh, **"Techniques to Quantify Effectiveness of site-wide actions"**, US Patent Application number 15/819,808

M. Dash, T. Mohandoss, R. Sinha, D. Singal, V. Palancinc, **P. Maneriker**, **"Rapid and Precise Interpretable Decision Sets for Describing Marketing Segments"**, In filing process

B. V. Srinivasan, **P. Maneriker**, K. Krishna, N. Modani, **"Method to construct content based on a content repository"**, In filing process

D. Singal, **P. Maneriker**, R. Sinha, Atanu R. Sinha, **"Identifying High Value Segments in Categorical Data"**, In filing process

Relevant Courses

Computer Science
Data Structures and Algorithms
Operating Systems
Functional Programming
Approximation Algorithms
Principles of Database Systems
Computer Systems Security
Modern Cryptology

Machine Learning
Probability and Statistics
Probabilistic Machine Learning
Machine Learning for Computer Vision
Learning with Kernels

Other
Language and Society
Introduction to Game Theory

Selected Research Projects

May 17 - Present **Style Breach Detection**

Abstract: Documents written Collaboratively may use multiple styles. This inconsistency may reduce the impact of the content of the document. In this project, we looked at the problems of detecting breaches of style within a document. We devised an LSTM based model to detect these breaches. We also developed an algorithm to generate suggestions to remove the style breaches so as to eliminate these breaches. Collaborated with Anandhvelu N. and mentored interns who worked on this problem. Paper and patent submission in preparation

Jul 17 - Present **Corpus-based Content Creation**

Abstract: Enterprise content writers are engaged in writing content for different purposes. Often, the content being written is already present in the enterprise content corpus in some manifestation. However, in absence of suitable tools, authors need to manually curate such content, thereby reducing their productivity greatly. We propose an automatic approach to generate content based on an author's intended snippet. We extract a set of content chunks related to the snippet from the repository. The proposed approach uses these chunks to build the content by simultaneously accounting for information coverage, relevance, diversity and coherence of the generated content.

Feb - Dec 17 **Forecasting Audiences for Display Platforms**

Abstract: We address the important problem of forecasting audience size for traffic arriving on a website, characterized by the entire set of attributes for any arrival being categorical (e.g. {US, Chrome, Mobile}). We modify Eclat to accommodate categorical variables. For the consequent frequent and infrequent item sets, we then provide forecasts by using time series analysis, and approximation based on condition probability. Applied to two real data sets, comparison with established algorithms shows that our proposed method lowers computation time on the task of FIM on categorical data. In addition, we introduce a framework to simulate data for categorical variables that capture complex statistical dependencies among these variables paralleling dependencies observed in real world data to stress test FIM algorithms. Collaborated with Dr. Ritwik Sinha, Dr. Atanu R. Sinha, and Dhruv Singal. Paper submitted to PAKDD 2018, patent in preparation

Jul - Dec 15 **SAT solving on GPUs**

Abstract: We explored classical SAT solving techniques (such as DPLL, CDCL) and whther they could be applied in a GPU context, using SIMD instructions for speedup. We propsed a new algorithm which could successfully parallelize using CUDA architecture. We implemented the algorithm using the CUDA thrust library. The algorithm did not scale well for SAT, but we also explored a variation for MAXSAT. Under the supervision of Prof. Subhajit Roy, We succesfully implemented various CUDA based algorithms and ran them on a GPU.

Extra Curricular Activities

- Former National Record holder for Rubik's Cube One Handed and Fewest Moves solving (2013)
- Actively involved in Literary Discussion Group, IIT Kanpur (2013 - 2015)
- Succesfully completed a Triathlon, Half-Marathon and multiple 10k runs. (2017)

References

Available on request