# Prakhar Gupta

## Professional Summary

I am a software engineer and researcher who loves to design and build data mining and machine learning systems that solve real business problems. I have experience of working in a research environment and been involved in all stages of projects including inception, prototyping, and deployment in product. I have worked with various forms of practical data, including text, image, Analytics data and other high-dimensional data. I am a creative problem solver and a quick learner who loves to absorb new ideas and can communicate clearly and effectively.

## Info


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| Job & Position: | Member of Technical Staff at Big Data Experience Lab, Adobe, India. |
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## Education and Experience

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| July 2015 - Current | Member of Technical Staff at BigData Experience Lab, Bangalore<br>Adobe Systems, India |
| May 2014 - July 2014 | Research Intern at BigData Experience Lab, Bangalore<br>Adobe Systems, India |
| May 2013 - July 2013 | Research Intern at BigData Experience Lab, Bangalore<br>Adobe Systems, India |
| July 2010 - June 2015 | Masters and Bachelors of Technology (Dual Degree) in Computer Science<br>Indian Institute of Technology, Roorkee, India<br>Gpa: 8.95/10, Distinction awarded |

## Selected Projects

*ORGANISATION* — *Big Data Experience Labs*, Adobe, India

*July 2015- Present*

### Intelligent Alerts & Automation and related Projects

An *enhanced alerting mechanism* for a marketer using Adobe Analytics, to notify him about relevant changes in data, personalized based on the context and user preferences.

- Worked on designing and implementing various components of the project including-
  - *User profiling and interaction module* - Computes the interest level of web-metrics for a user. Formulated the problem of learning user preferences as a linear bandit problem.
  - *Play Experience*- Active Learning component to learn initial preferences for new users.
- Incorporated data from various sources to build an end to end *online* system in Java. Technology tech-transferred to Adobe Analytics after rigorous testing.
- Patent filed and research paper submitted to RecSys 2017.

*Sep 2016- Present*

### Virtual Assistant for Adobe Analytics

The technology will enable an analyst to perform analysis with enterprise data through multiple modes of interactions like speech, text and graphical interface. The assistant will learn domain knowledge, dialog policies and user preferences through the interactions.

- Designed and built a prototype system of a conversational analyst
- Consulted with trained analysts, product managers & designers to define features & use cases.
- Technology demonstrated at Adobe Summit and Tech Summit and patent filing in progress.

*Feb 2016- Present*

**End of Period Metric Projection with Intra Period Alerts**
The technology uses the timeseries of a metric at a intra-period granularity into account to provide up to date metric value forecasts based alerts for the end of period.

- Designed and implemented the system using R, and python
- Leveraged RNN-LSTM based models and used tensorflow and keras frameworks.
- Patent was filed for the technology.

*June 2016- Present*

**Semantic characterization of automatically detected multimedia trends**
The project addresses the problem of *automatically detecting creative trends* for Adobe stock and Behance and *characterize* them in order to make them easily comprehensible.

- *Mentored* a group of three interns for the project during summer internship.
- Used Hive and Hadoop for data access and manipulation.
- Demonstrated technology to product teams and at Tech Summit and patent filed.

*Summer 2013, 2014*

**Internship Projects**

- *Topic and Event Detection in Social Media*- Identifying fine-grained stories within a broader trending topic on Twitter, by online clustering for streaming tweets. Achieved high recall of 80% and 86% purity of clusters. Two Patents filed and paper published at IKDD.
- *Adobe social learning* - Developed a *social learning platform* for document cloud which involved creating a collaborative environment for readers of a document by recommending experts and user annotations based on the semantic analysis of the content of the document. Implemented the backend component of the system in *node.js*

*ORGANISATION 2014-2015*

*Indian Institute of Technology, Roorkee*, India
**Master's Thesis- Aspect Detection and Grouping for Opinion Mining**
Completed dissertation on the topic *"An Approach to Aspect Detection and Grouping for Opinion Mining"*. The work involved leveraging the syntactic, semantic and contextual features of online hotel and restaurant reviews to extract information aspects, and summarize them into meaningful feature groups. Work published at CICLING, 2015 conference.

## Teaching and Responsibilities

**Internship Mentor**
Mentored a group of three students at Adobe over the summer of 2016 on a research project.

**Tutoring**
Facilitated hour-long interactive tutorials with group of 30 students for Data Structures (CS-102) course, 2015.

**Coordinator of mobile application development group**
Coordinator of mobile application development team at IIT Roorkee. Co-led the team of application developers for Thomso 2013 application creation. Organized mobile application development competition at Ifest 2013.

## Technical Skills

- Java, Python (including scikit-learn, Pandas, numpy, etc.), R, C++, node.js, HTML, JSP, Javascript, SQL mongodb
- Experience with Hadoop, MapReduce, Hive, Parallel computing and computing clusters
- Data mining, cleaning, and imputing, statistical data modeling
- Pattern recognition, forecasting, classification, clustering etc.

## Relevant Courses

Design and Analysis of Algorithms
Artificial Intelligence
Advanced Database Management Systems
Machine Learning (Coursera)
Object Oriented System Design
Data Mining and Warehousing
Intrr to R (O'Reilly)
Neural Networks for Machine Learning (Coursera)

## Research Publications and Patents

Publications:

1. Prakhar Gupta, Sandeep Kumar, Kokil Jaidka. **"Summarizing Customer Reviews through Aspects and Contexts"** Accepted as a regular paper in *International Conference on Intelligent Text Processing and Computational Linguistics, pp. 241-256. Springer International Publishing, 2015.*
2. Kokil Jaidka, Kaushik Ramachandran, Prakhar Gupta, and Sajal Rustagi.* **"SocialStories: Segmenting Stories within Trending Twitter Topics"** *In Proceedings of the 3rd IKDD Conference on Data Science, p. 1. ACM, 2016.*

   ** equal contribution from all authors*
3. Branislav Kveton, Gaurush Hiranandani, Prakhar Gupta, and Iftikhar Ahamath Burhanuddin **"Personalized Intelligent Alerts as Generalized Linear Bandit Model."** Submitted to *RECSYS*, 2017.

Patents:

1. Sanjeev Biswas, Prakhar Gupta, Shweta Chahar, Vaibhav Khandelwal **Adobe Social Learning:-Data Structure and Algorithm to compute class dynamically per page of a document.** (Granted)
2. Kokil Jaidka, Prakhar Gupta, Sajal Rustagi, R. Kaushik **Tracking Changes in User-Generated Textual Content on Social Media Computing Platforms** (Filed)
3. Prakhar Gupta, Kokil Jaidka, Sajal Rustagi, R. Kaushik **A Method for Segmenting Stories in Topical Discussions from User-generated Posts** (Filed)
4. Prakhar Gupta, Kokil Jaidka, Iftikhar Burhanuddin, Harvineet Singh **A method for generating natural language descriptions to explain data changes and relationships in alert messages** (Filed)
5. Prakhar Gupta, Aayush Ojha, Debraj Basu, and Nalam V S S Chaitanya. **Technique for semantic characterization of automatically detected multimedia trends** (Filed)
6. Prakhar Gupta, Shiv Saini, Gaurush Hiranandani, and Harvineet Singh. **End of Period Metric Projection with Intra Period Alerts.** (Filed)