

# AASTHA NIGAM

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## PROFILE

Data scientist with strong background in data mining, machine learning, recommendation systems, natural language processing, deep learning, big data, and statistics. Passionate about building data driven models to solve real world business applications across sectors.

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## EDUCATION

### UNIVERSITY OF NOTRE DAME

Ph.D. in Computer Science and Engineering, *Advisor*: Prof. Nitesh V. Chawla

Notre Dame, IN  
Anticipated July 2018

M.S. in Computer Science and Engineering, *Advisor*: Prof. Nitesh V. Chawla (*GPA*: 3.93/4)

April 2017

*Thesis Title*: Beyond Who and What: Data Driven Approaches for User Characterization

### IIT-DELHI

B.S. (with Hons.) in Computer Science and Engineering (*GPA*: 9.25/10)

New Delhi, India  
May 2012

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## EXPERIENCE

### UNIVERSITY OF NOTRE DAME

#### Research Assistant, Department of Computer Science and Engineering

Notre Dame, IN  
July 2014 – Present

- Research focuses on building content driven machine learning models for domains as diverse as social media, online healthcare and world peace accords. Models aim at mining interesting patterns from structured and unstructured data utilizing key concepts from machine learning, data mining, natural language processing and deep learning.
- Developed personalized user profiles for online health consumers (~ 2 million users), performed user segmentation using demographics and analyzed factors affecting their preferences for a large-scale national online health content provider.
- Implemented a successful framework to model content gap between a media company and their Twitter users to increase user engagement. The company leveraged the framework to improve content quality posted on Twitter.

### ARMY RESEARCH LABORATORY

#### Visiting Researcher

Adelphi, MD  
July 2017

- Research focuses on building context driven deep learning sequential models to study the evolution of public opinion and sentiment over time to understand the success of peace process through social media signals.

### IBM RESEARCH

#### Research Intern

Dublin, Ireland  
June 2015 – August 2015

- Implemented optimization algorithms such as AdaGrad as an extension to the Machine Learning library by Apache Spark for large-scale data cluster computing. Currently used by the company; resulted in a publication.
- Participated in ICDM 2015 Kaggle Data Challenge to connect user actions across different devices using context

### UNIVERSITY OF NOTRE DAME

#### Research Assistant, Department of Computer Science and Engineering

Notre Dame, IN  
January 2014 – July 2014

- Employed context based perception approach leveraging audio and visual signals for learning situational contexts to improve navigation of robots in human social environment. First research to predict situational context for robots; resulted in a publication.

### INNOVATION LABS, TATA CONSULTING SERVICES R&D

#### Researcher

Noida, India  
July 2012 – July 2013

- Developed a web based collaborative workbench for real time analysis and visualization, using tools such as d3 library and JavaScript, for varied datasets including car sensor data and time-series. Successfully used for evaluating research outputs.

### ABB RESEARCH

#### Research Intern

Bengaluru, India  
May 2011 – July 2011

- Developed an android-based mobile application for building real time workflows in the power sector. Designed customized process objects that enabled a user to create more descriptive and domain relevant workflows.

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## SELECTED PUBLICATIONS

- A. Nigam, *et.al. Harvesting Social Signals to Inform Peace Processes Implementation and Monitoring*, Big Data Journal, 2017
- AT Hadgu, A. Nigam, *et.al. Large-scale learning with AdaGrad on Spark*. IEEE International Conference on Big Data, 2015.

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## TECHNICAL SKILLS & PROFESSIONAL ACTIVITIES

**Computer Skills:** Proficient in Python, R, Spark, Hadoop, Condor, Java, SQL, Weka, MATLAB, JavaScript, C, C++, LaTeX.

**Honors & Awards:** 2<sup>nd</sup> Rank, ACM Student Research Competition (2017); 2<sup>nd</sup> Rank, Schurz Data Innovation Challenge (2015)

**Leadership:** Professional Development Chair, Graduate Student Union & SWE, University of Notre Dame (2016); Graduate Student Representative, Univ. Committee on Women Faculty and Students (2016); Member, Graduate Student Board, CSE Dept. (2016).

**Teaching Skills:** Designed 5-day python course for middle school students (2016); Teaching assistant for *Design and Analysis of Algorithms* (2013), *Basic Unix for Engineers* (2014), and *Theory of Computation* (2011).