Abhijit Mishra

Machine Learning and Natural Language Processing Scientist
Apple Inc., Seattle, USA
Email: abhijitmishra@apple.com
URL: https://abhijitmishra.github.io

ABOUT ME

I am a Machine Learning and Natural Language Processing Scientist in the Siri International team at Apple inc., based out of the Seattle office. Before this I was a part of IBM Research, Bangalore, India, serving as Research Scientist. I have obtained Ph.D in Computer Science and Engineering (CSE) from IIT Bombay, under the guidance of Prof. Pushpak Bhattacharyya. My research interests include Natural Language Generation, Dialog Systems, Deep Generative Modeling for Text and Cognitive NLP.

APPOINTMENTS

1. **Machine Learning and Natural Language Processing Scientist** (Feb 2020 -)
Apple inc. , Seattle, USA

   - Division: Siri International
   - Current Focus: Multilingual and Cross-lingual Dialog Systems

2. **Research Scientist** (March 2017- Jan 2020)
IBM Research, Bangalore, India

   - Department: AI Technology
   - Projects: Systems and services involving multilingual Natural Language Generation from Structured Data, Unsupervised Text Simplifcation, Controllable Text Generation

3. **Research Assistant** (July 2011 – March 2017)
Indian Institute of Technology Bombay, Mumbai, India

   - Department: Computer Science and Engineering
   - Project 1: *Cognitive NLP* - Harnessing Cognitive Information for Natural Language Processing, An Investigation based on Eye-tracking (Thesis Project)
   - Project 2: A Multilingual Machine Translation Framework for Indian Languages
   - Project 3: Generation of Multilingual Resources for Indian Language Processing through Crowdsourcing

4. **Visiting Researcher** (June 2012 – Aug 2012)
Copenhagen Business School, Copenhagen, Denmark
   - Research Topic: Eye Tracking Applications in Translation Process Research

5. Assistant System Engineer
Tata Consultancy Services Limited, Bangalore India
- Role: Developer, Client: Allianz-USA
- Developed and supported a module for automatically managing documents using Java, VB Script, HTML-CSS

EDUCATION

Ph.D. Computer Science and Engineering (2011-2017)
Indian Institute of Technology Bombay, Mumbai, India
- **Thesis Title:** Harnessing Cognitive Information for Natural Language Processing: An Investigation based on Eye-tracking
- **Thesis Advisor:** Pushpak Bhattacharyya, Professor, Dept. of C.S.E, IIT Bombay

Bachelor of Technology in Computer Science and Engineering (2006-2010)
College of Engineering and Technology, Bhubaneswar, India
- CPI 9.03 (out of 10)

BOOK PUBLISHED

Abhijit Mishra and Pushpak Bhattacharyya, \Cognitively Inspired Natural Language Processing", Springer, Singapore. DOI: https://doi.org/10.1007/978-981-13-1516-9 .
URL: https://link.springer.com/book/10.1007/978-981-13-1516-9#about

PUBLICATIONS

1. Sandeep Mathias, Rudra Murthy, Diptesh Kanojia, Abhijit Mishra, Pushpak Bhattacharyya. 2020. Happy Are Those Who Grade without Seeing: A Multi-Task Learning Approach to Grade Essays Using Gaze Behaviour. In proceedings of the 1st Conference of the Asia-Pacific Chapter of the Association for Computational Linguistics and the 10th International Joint Conference on Natural Language Processing **(AACL-IJCNLP 2020),** worldwide.

2. Sandeep Mathias, Diptesh Kanojia, Abhijit Mishra and Pushpak Bhattacharyya. 2020. A Survey on Using Gaze Behaviour for Natural Language Processing. 2020. In proceedings of the *29th International Joint Conference on Artificial Intelligence & the 17th Pacific Rim International Conference on Artificial Intelligence* **(IJCAI-PRICAI 2020)**, Yokohama, Japan.

3. Abhijit Mishra, Tarun Tater, Karthik Sankaranarayanan. 2019. A Modular Architecture for Unsupervised Sarcasm Generation, In proceedings of the *Empirical Methods for Natural Language Processing* **(EMNLP 2019)**, Hong Kong, China, 3rd Nov - 7th Nov, 2019

4. Anirban Laha, Parag Jain, <u>Abhijit Mishra</u>, Karthik Sankaranarayanan. 2019. Scalable Micro planned Generation of Discourse from Structured Data. **Computational Linguistics**, MIT Press.

5. Sai Surya, <u>Abhijit Mishra</u>, Anirban Laha, Parag Jain, Karthik Sankaranarayanan. 2019. Unsupervised Neural Text Simplification. In proceedings of the 57th *Annual Conference of the Association for Computational Linguistics* **(ACL 2019)**, Florence, Italy, 28th July-2nd Aug, 2019.

6. Parag Jain, <u>Abhijit Mishra</u>, Amar P. Azad, Karthik Sankaranarayanan. 2019. Unsupervised Controllable Text Formalization. In proceedings of the 33rd Conference of the *Association for the Advancement of Artificial Intelligence* **(AAAI 2019)**, Hawaii, USA, 27th Jan - 1st Feb, 2019

7. Sandeep Mathias, Diptesh Kanojia, Kevin Patel, Samarth Agrawal, <u>Abhijit Mishra</u> and Pushpak Bhattacharyya. 2018. Eyes are the Windows to the Soul: Predicting the Rating of Text Quality Using Gaze Behaviour. In proceedings of the 56th *Annual Conference of the Association for Computational Linguistics* **(ACL 2018**), Melbourne, Australia, 15-20 July, 2018.

8. Vitobha Munigala, <u>Abhijit Mishra</u>, Srikanth Govindaraj Tamilselvam, Shreya Khare, Riddhiman Dasgupta and Anush Sankaran. 2018. PersuaAIDE ! An Adaptive Persuasive Text Generation System for Fashion Domain. In proceedings of the *Web Conference* **(WWW 2018)**, Lyon, France, 23th April - 27th April,2018

9. <u>Abhijit Mishra</u>, Srikanth Tamilselvam, Riddhiman Dasgupta, Seema Nagar and Kuntal Dey. 2018. Cognition-Cognizant Sentiment Analysis with Multitask Subjectivity Summarization based on Annotators' Gaze Behavior. In proceedings of the 32nd Conference of the *Association for the Advancement of Artificial Intelligence* **(AAAI 2018)**, New Orleans, USA, 2nd February - 7th February, 2018

10. Srikanth Tamilselvam, Seema Nagar, <u>Abhijit Mishra</u> and Kuntal Dey. 2017. Graph Based Sentiment Aggregation using ConceptNet Ontology. In proceedings of the *International Joint Conference on Natural Language Processing* (**IJCNLP 2017)**, Taipei, Taiwan, 27 November-1st December, 2017

11. Shweta Garg, Sudhanshu S Singh, <u>Abhijit Mishra</u> and Kuntal Dey. 2017. CVBed: Structuring CVs using Word Embeddings. In proceedings of the *International Joint Conference on Natural Language Processing* **(IJCNLP 2017)**, Taipei, Taiwan, 27 November-1st December, 2017

12. Joe Cheri Ross, <u>Abhijit Mishra</u>, Kaustuv Kanti Ganguli and Pushpak Bhattacharyya. 2017. Identifying Raga Similarity Through Embeddings Learned from Compositions' Notation. In proceedings of the *Annual Conference of the International Society for Music Information Retrieval* (**ISMIR 2017)**, Suzhou, China, 23-28 October, 2017

13. <u>Abhijit Mishra</u>, Kuntal Dey and Pushpak Bhattacharyya. 2017. Learning Cognitive Features from Gaze Data for Sentiment and Sarcasm Classiffication using Convolutional Neural Network. In proceedings of the 55th *Annual Conference of the Association for Computational Linguistics* (**ACL 2017**), Vancouver, Canada, 30 July-4 August, 2017

14. <u>Abhijit Mishra</u>, Diptesh Kanojia, Seema Nagar, Kuntal Dey, Pushpak Bhattacharyya. 2017. Scanpath Complexity: Modeling Reading Effort using Gaze Information. In proceedings of the 31st Conference of the *Association for the Advancement of Artificial Intelligence* (**AAAI 2017**), San Francisco, USA, 4-9 February, 2017

15. <u>Abhijit Mishra</u>, Diptesh Kanojia, Seema Nagar, Kuntal Dey and Pushpak Bhattacharyya. 2016. Harnessing Cognitive Features for Sarcasm Detection. In proceedings of the 54th *Annual Conference of the Association for Computational Linguistics* (**ACL 2016**), Berlin, Germany, 7-12 August, 2016

16. <u>Abhijit Mishra</u>, Diptesh Kanojia, Kuntal Dey, Seema Nagar and Pushpak Bhattacharyya. 2016. Leveraging Cognitive Features for Sentiment Analysis. In proceedings of the *SIGNLL Conference on Computational Natural Language Learning* (**CoNLL 2016**), Berlin, Germany, August 11-12, 2016

17. <u>Abhijit Mishra</u>, Diptesh Kanojia and Pushpak Bhattacharyya. 2016. Predicting Readers' Sarcasm Understandability by Modelling Gaze Behaviour. In proceedings of the 30th Conference of the *Association for the Advancement of Artificial Intelligence* (**AAAI 2016**), Phoenix, USA, Feb 12-17, 2016

18. Aditya Joshi, <u>Abhijit Mishra</u>, Balamurali AR, Pushpak Bhattacharyya, Mark J Carman. 2015. A Computational Approach for Automatic Prediction of Drunk-texting. In proceedings of the 53rd *Annual Conference of the Association for Computational Linguistics* (**ACL 2015**), Beijing, China, July 2015 (short-paper)

19. Aditya Joshi, <u>Abhijit Mishra</u>, Nivvedan Senthamilselvan and Pushpak Bhattacharyya. 2014. Measuring Sentiment Annotation Complexity of Text. In proceedings of the 52nd *Annual Conference of the Association for Computational Linguistics* (**ACL 2014**), Baltimore, USA, 23-25 June, 2014 (short-paper)

20. Anoop Kunchukuttan, <u>Abhijit Mishra</u>, Rajen Chatterjee, Ritesh Shah and Pushpak Bhattacharyya. 2014. Shata-Anuvadak: Tackling Multiway Translation of Indian Languages. In proceedings of the *Language Resources and Evaluation Conference* (**LREC 2014**), Rekjyavik, Iceland, 26-31 May, 2014

21. <u>Abhijit Mishra</u> and Pushpak Bhattacharyya. 2013. Automatically Predicting Sentence Translation Difficulty. In proceedings of the 51st *Annual Conference of the Association for Computational Linguistics* (**ACL 2013**), Soffia, Bulgaria, 4-9 August, 2013 (short-paper)

Workshop and System Papers:

1. Abhijit Mishra, Md Faisal Mahbub Chowdhury, Sagar Manohar, Dan Gutfreund, Karthik Sankaranarayanan. 2020. Template Controllable keywords-to-text Generation. arXiv preprint arXiv:2011.03722

2. Parag Jain, Priyanka Agrawal, Abhijit Mishra, Mohak Sukhwani and Anirban Laha. 2017. Story Generation from Sequence of Independent Short Descriptions. **ML4Creativity**, SIGKDD Workshop, Halifax, Nova Scotia - Canada, 2017

3. Joe Cheri, Abhijit Mishra and Pushpak Bhattacharyya. 2016. Leveraging Annotators' Gaze Behaviour for Coreference Resolution. ACL 2016 Workshop on *Cognitive Aspects of Computational Language Learning* **(CogACLL 2016)** at ACL 2016, Berlin, Germany, August 11, 2016

4. Diptesh Kanojia, Shehzaad Dhuliawala, Abhijit Mishra, Naman Gupta and Pushpak Bhattacharyya. 2015. TransChat: Cross-Lingual Instant Messaging for Indian Languages. **ICON 2015**, December 2015

5. Abhijit Mishra, Aditya Joshi and Pushpak Bhattacharyya. 2014. A cognitive study of subjectivity extraction in sentiment annotation., 5th Workshop on Computational Approaches to Subjectivity, Sentiment and Social Media Analysis **(WASSA 2014)**, Baltimore, USA, 27 June, 2014

6. Anoop Kunchukuttan, Ratish Pudupully, Rajen Chatterjee, Abhijit Mishra, Pushpak Bhattacharyya. 2014. The IIT Bombay SMT System for ICON 2014 Tools Contest. NLP Tools Contest at ICON 2014 **(ICON 2014),** Goa, India, Dec 2014

7. Piyush Dungarwal, Rajen Chatterjee, Abhijit Mishra, Anoop Kunchukuttan, Ritesh Shah and Pushpak Bhattacharyya. 2014. The IIT Bombay Hindi-English Translation System at WMT 2014. 9th Workshop on Statistical Machine Translation **(WMT14)**, Baltimore, USA, 26-27 June, 2014

8. Anoop Kunchukuttan, Rajen Chatterjee, Shourya Roy, Abhijit Mishra and Pushpak Bhattacharyya. 2013. TransDoop: A Map-Reduce based Crowdsourced Translation for Complex Domain. **ACL 2013**, Soffia, Bulgaria, 4-9 August, 2013

9. Abhijit Mishra, Michael Carl and Pushpak Bhattacharyya. 2012. A Heuristic Based Approach for Systematic Error Correction of Gaze Data for Reading. First Workshop on Eye Tracking and NLP, part of COLING 2012. Mumbai, India, 15 Dec, 2012

SIGNIFICANT PROJECTS

1. **Natural Language Generation (NLG) from Structured Data** (Duration: 2017-2020)

   The research aims at generating natural language descriptions from structured data such as knowledge graphs, tables *etc*. Motivated by the need to approach this problem in a manner that is scalable and adaptable to newer domain (unlike existing related systems that are

rule/template-based or end-to-end neural systems), we introduce scalable modular approaches that do not require any labelled data for generation. Rather, these systems require only large scale unlabeled text and basic NLP tools such as Part of Speech taggers. Our initial experiments on a benchmark mixed domain dataset reveal the superiority of our framework over various existing data-to-text systems.

2. **Unsupervised Controllable Language Generation** *(Duration: 2017-2019)*

Like data-to-text NLG, scalable and interpretable solutions are also elusive for text-to-text NLG problems such as text-simplification, formalization, and paraphrasing. We aim to devise new unsupervised learning schemes for text-to-text NLG problems. So far, we have proposed novel and practical solutions for unsupervised text simplification and controllable text transformation. We have also attempted to provide solutions for sarcasm generation, a highly nuanced task that requires language understanding at deep semantic and pragmatic levels.

3. **Cognitive NLP through Eye-tracking** *(Duration: 2013-2017, Remark: PhD. Thesis)*

The research attempts to gain insights into the cognitive underpinnings of human language processing and understanding. The insights are then translated to methods and models that contribute to the field of NLP by achieving the following objectives: (1) Optimizing Human *Annotation Effort* for better annotation management for NLP, and (2) Improving existing NLP systems by introducing cognitive features.

Today's NLP is highly statistical in nature and needs massive amount of human annotated data. In our setting, apart from collecting the annotations, we aim to record annotators' activities in the form of their eye movement patterns, key-strokes and neuro-electric signals obtained using EEG. Through a series of studies using eye-tracking alone, we show that data of such kind, can be used to model complexities of tasks like translation and sentiment annotation, where eye-movement data is used to label training data that model annotation effort for the specified tasks. This can be useful for better annotation management (for example, proposing better annotation cost models). We also show that eye movement data can also be used to extract *Cognition Driven* Features, to be used to be used for difficult NLP tasks like Sentiment Analysis and Sarcasm Detection. Our proposed approaches consistently perform better than state-of-the-art sentiment and sarcasm classifiers, showing that cognitive features can be useful for tasks that are nuanced by linguistic subtleties. For more information, visit www.cfilt.iitb.ac.in/cognitive-nlp/

4. **Indian Language Machine Translation** *(Duration: 2013-2014)*:

We developed a compendium of 110 Statistical Machine Translation systems built from parallel corpora of 11 Indian languages belonging to the Indo-Aryan and Dravidian families. We analyze the relationship between translation accuracy and the language families involved. We feel that insights obtained from this analysis will provide guidelines for creating machine translation systems for specific Indian language pairs. For our studies, we built phrase based systems and some extensions. Across multiple languages, we show improvements on the

baseline phrase based systems using these extensions: (1) Source side reordering for English-Indian language translation, and (2) Transliteration of untranslated words for Indian language-Indian language translation. These enhancements harness shared characteristics of Indian languages. To stimulate similar innovation widely in the NLP community, we have made the trained models for these language pairs publicly available.

5. **Crowdsourcing for NLP Resources** *(Duration: 2011-2013)*
   We developed a framework (Funded by Xerox Research Center, India) that helps an NLP developer to customize and float linguistic annotation tasks through popular crowdsourcing service providers (like Amazon's Mechanical Turk). Though the framework is generic and flexible enough to tackle different linguistic tasks, we took Machine Translation as our use case to demonstrate its efficacy. We show that, using this framework, multilingual translation parallel corpora could be collected, and quality controlled with less expenditure in comparison to the traditional way of outsourcing translation tasks to professional translators.

FEDERAL FUNDING

- Cognitive Science Research Initiative Scheme (2013), Department of Science and Technology (Govt. of India), for research on Cognitive Natural Language Processing based on Eye-tracking and EEG (INR 4 Million, PI - Prof. Pushpak Bhattacharyya)
- Research Infrastructure Funding Scheme, IIT Bombay (2014) for Cognitive NLP Lab Setup (INR 4.2 Million, PI - Prof. Pushpak Bhattacharyya)

SELECTED PATENTS

1. Vinayak Sastri, Joydeep Mondal, Abhijit Mishra, Seema Nagar, Kuntal Dey. 2019. DYNAMIC CONTENT RATING ASSISTANT. *Status: FILED by IBM*, US Patents and Trademarks Office **(USPTO)**

2. Abhijit Mishra, Enara C Vijil, Seema Nagar, Kuntal Dey. 2018. QUESTION ANSWERING SYSTEM INFLUENCED BY USER BEHAVIOR AND TEXT METADATA GENERATION. *Status: FILED by IBM*, US Patents and Trademarks Office **(USPTO)**

3. Abhijit Mishra, Parag Jain, Anirban Laha, Karthik Sankaranarayanan. 2018. GENERATION OF VARIABLE NATURAL LANGUAGE DESCRIPTIONS FROM STRUCTURED DATA. *Status: FILED by IBM*, US Patents and Trademarks Office **(USPTO)**

4. Parag Jain, Amar Azad, Abhit Mishra, Karthik Sankaranarayanan. 2018. UNSUPERVISED TUNABLE STYLIZED TEXT TRANSFORMATION. *Status: FILED by IBM*, US Patents and Trademarks Office **(USPTO)**

5. Abhijit Mishra, Anirban Laha, Parag Jain, Karthik Sankaranarayanan. 2018. REAL-TIME ASSESSMENT OF TEXT CONSISTENCY. *Status: FILED by IBM*, US Patents and Trademarks Office **(USPTO)**

6. Abhijit Mishra, Parag Jain, Amar Azad, Karthik Sankaranarayanan. 2018. CONTROLLABLE STYLE BASED TEXT TRANSFORMATION. *Status: FILED by IBM*, US Patents and Trademarks Office (**USPTO**)

TUTORIALS AND INVITED TALKS

- [To present]: Industry Keynote "Frontiers in Natural Language Understanding for Conversational Platforms", CODS-COMAD, 2021, https://cods-comad.in/distinguished_speakers.html
- *28 July, 2019:* "Storytelling from Structured Data and Knowledge Graphs: An NLG Perspective". Tutorial at the 57th Annual Conference of ACL 2019, Florence, Italy. URL: https://sites.google.com/view/acl-19-nlg
- 18 June, 2019: "Controllable Text Style Transfer'", AI Horizon Network Seminar Series, IBM (worldwide)
- *18 Jan, 2019*: Tutorial on "Natural Language Generation and its Applications", Indian Institute of Science, Bangalore, India
- *28 July, 2018:* Invited talk at The FAER Faculty Development Workshop on AI\&ML, M.S. Ramaiah University titled "Understanding how machines understand us: A perspective on Natural Language Processing", M.S. Ramaiah University, Bangalore, India
- *26 Apr, 2018:* Tutorial on "Cognitively Inspired Natural Language Understanding and Generation", Dharmsinh Desai University, Gujarat, India
- *2 Feb, 2018:* Talk on paper "Cognition-Cognizant Sentiment Analysis with Multitask Subjectivity Summarization based on Annotators' Gaze Behavior", AAAI 2018 Conference, New Orleans, USA
- 20 Jan, 2018: Tutorial on "Natural Language Generation", Indian Institute of Science, Bangalore, India
- 31 Jul, 2017: Talk on paper "Learning Cognitive Features from Gaze Data for Sentiment and Sarcasm Classification using Convolutional Neural Network", ACL 2017 Conference, Vancouver, Canada
- 08 Aug, 2016: Presentation on "Harnessing Cognitive Features for Sarcasm Detection.", ACL 2016 Conference, Berlin, Germany
- 20 June 2016: Tutorial on "Natural Language Processing and Machine Learning", VIVA Institute of Technology, Mumbai, India
- 21 Jan, 2015: Talk on "Cognitive NLP", IIT Bombay (Target Audience: Visiting Team, NIST, USA)
- *10 Jul, 2014 - 18 Jul, 2014*: Tutorial on "Natural Language Processing", Samsung Research Lab, Bangalore
- *28 Nov, 2013*: Talk on "Eye Tracking Applications in Translation Process Research", JSS Academy of Science, Noida, India
- 10 Aug, 2013: Talk on "Estimation of Text Translation Complexity", Copenhagen Business School, Copenhagen, Denmark

AWARDS AND RECOGNITIONS

- Invited as an expert panelist to the Vaibhav Summit, a global summit of overseas and resident Indian scientists and academicians, held online in the month of Oct 2020. The summit is initiated by the Government of India, and the theme of discussion is ***NLP for Social Good***. Only 20 distinguished researchers in the field of NLP are invited to this event.
- Recipient of IBM Stock Award for 2018 for outstanding research achievement. This is an individual award which is given to a smaller number of people globally every year, chosen by the CEO of IBM.
- Recipient of *IBM Ph.D. Fellowship* award for the academic year of 2015-2016
- Recipient of institute level, department level conference travel grants and Microsoft and IBM Travel Grant to attend ACL (2013, 2016, 2017) and AAAI (2016, 2018) conference
- Received Regional Runner-Up Award for the region India and South-east Asia in the global Windows 7 Coding contest (Code 7 Contest, 2009) organized by Microsoft Corporation for developing a gesture based interactive human computer interface that can run on any Windows based system with a low-cost web-camera

Media Coverage on Research

- *IBM India Engineers help make US Open Virtual, 2nd September, 2020, The Times of India.* https://timesofindia.indiatimes.com/business/india-business/ibms-india-engineers-helped-make-us-open-virtual/articleshow/78018792.cms
- *IIT-Bombay team creates program to detect drunk text message writers*, The Indian Express, 21st August, 2015. https://indianexpress.com/article/cities/mumbai/iit-bombay-team-creates-program-to-detect-drunk-text-message-writers/

ACADEMIC SERVICES

Senior Program Committee Member

1. Association for the Advancement of Artificial Intelligence (AAAI 2021)

Program committee member / Reviewer

1. North American chapter of Association for Computational Linguistics (NAACL 2021)
2. Transactions of the Association for Computational Linguistics (TACL 2020)
3. Empirical Methods for Natural Language Processing (EMNLP 2020) [**[Outstanding reviewer]**
4. International Joint Conference on Artificial Intelligence (IJCAI-PRICAI, 2020)
5. ACM Computing Surveys (ACM-CSur, 2020)
6. Association for Computational Linguistics (ACL 2020)
7. Computational Linguistics Conference (COLING 2020)
8. Association for the Advancement of Artificial Intelligence (AAAI 2020)
9. Empirical Methods for Natural Language Processing (EMNLP 2019)
10. Association for Computational Linguistics (ACL 2019)

11. Empirical Methods for Natural Language Processing (EMNLP 2018)
12. Computational Linguistic Conference (COLING 2018)
13. Association for Computational Linguistics (ACL 2018) **[Adjudged as top reviewer]**
14. Language Resources and Evaluation Conference (LREC 2018)
15. ACM Transactions on Asian and Low-Resource Language Information Processing (TALLIP 2018)
16. IEEE Transactions on Affective Computing (2018)
17. Association for Computational Linguistics (ACL 2017)
18. Conference on Machine Translation (WMT 2017)
19. Computational Linguistic Conference (COLING 2016)
20. North American chapter of Association for Computational Linguistics (NAACL 2016)
21. Conference on Machine Translation (WMT 2016)
22. Conference on Machine Translation (WMT 2015)

Organizing Committee member
1. Computational Linguistic Conference (COLING 2012), Mumbai, India

Other
1. Teaching Assistant for Natural Language Processing Course (CS 626-460), Autumn, 2014

STUDENT GUIDANCE AND MENTORING

Co-guided Thesis Projects
- Nivvedan S. (B.Tech, C.S.E., IIT Bombay, 2014): *Eye-tracking and Sentiment Analysis*
- Shubham Singhal (B.Tech, C.S.E, IIIT Allahabad, 2014): *Clustering and Analysis of Scanpaths*
- Bharadwaj Rallabandi (B.Tech, C.S.E, IIT Bombay, 2015): *Cognitively Inspired Document Level Sentiment Analysis*
- Krishna Guddipati (B.Tech, C.S.E, IIT Bombay, 2017): *Grammar Correction for NLG output*

Mentoring Interns
- Krishna Guddipati (B.Tech, C.S.E, IIT Bombay, 2017): *Scoring Grammaticality of NLG output*
- Sai Surya (B.Tech, C.S.E, IIT Kharagpur, 2018): *Unsupervised Neural Text Simplification*
- Kevin Patel (Ph.D., C.S.E, IIT Bombay, 2019): *Explainable NLP*

TECHNICAL SKILLS

- *Programming Languages:* Python, C, C++, Java, Perl, HTML and CSS
- *Language processing and machine learning tools:* PyTorch and Keras for Deep Learning, NLTK, Stanford Core NLP tool, Moses Statistical Machine Translation Toolkit, Weka, Scikit-learn

- *Eye-tracking/EEG devices and tools:* SR research Eyelink 1000, Tobii eye-tracking systems, Translog-II-eye tracking tool (developed some portions of this tool), Biosemi EEG

PERSONAL DETAILS

Date of Birth: 3rd March 1989
Languages Known: English, Hindi, Odia, and German (basic)