

# ABHISHEK SHARMA

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## EDUCATION

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**Indian Institute of Technology (BHU), Varanasi**

Integrated Dual Degree (B.Tech, M.Tech) in Mathematics and Computing

July 2016 - Present

CPI: 9.19/10

**Ahlcon Public School, Mayur Vihar, Delhi**

Class XII Board Examination

2016

Percentage: 97.20

## PUBLICATIONS

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1. Abhishek Sharma, Danish Contractor, Harshit Kumar and Sachindra Joshi. Neural Conversational QA: Learning to Reason v.s. Exploiting Patterns. **Preprint** <https://arxiv.org/abs/1909.03759>
2. Abhishek Sharma, Ganesh Katrapati and Dipti Misra Sharma. IIT(BHU)–IIITH at CoNLL SIG-MORPHON 2018 Shared Task on Universal Morphological Reinflection. In *Proceedings of the CoNLL SIGMORPHON 2018 Shared Task: Universal Morphological Reinflection*, Brussels. Association for Computational Linguistics <http://aclweb.org/anthology/K18-3013>.

## INTERNSHIPS

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**IBM Research AI**

*Conversational Question Answering*

May 2019 - August 2019

- Worked on ShARC – a conversational question answering task wherein the query posed by the user can be underspecified and the system must first ask the user follow up questions.
- Demonstrated and fixed exploits in the current dataset and proposed a system based on BERT which outperforms the current state of the art model.

**IIIT Hyderabad**

*Morphological Inflection*

May 2018 - July 2018

- Participated in Task 1 of CoNLL–SIGMORPHON 2018 Shared Task: Universal Morphological Reinflection.
- Designed a novel neural network architecture - LSTM based Sequence to Sequence model with multiple encoders and Pointer Generator network for the task.
- Our best performing system stood 4th among 28 systems, 3rd among 23 systems and 4th among 23 systems for the low, medium and high resource setting respectively.

## ACADEMIC ACHIEVEMENTS

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- Awarded with a scholarship of Rs. 50,000 to attend EMNLP 2018.
- Secured All India Rank 1449 in JEE Advanced 2016 among 200,000 candidates.
- Secured All India Rank 308 in JEE Mains 2016 among 1.2 million candidates.
- Awarded with KVPY scholarship by Govt. of India for securing All India Rank 653 among 100,000 students.
- Awarded with NTS scholarship by Govt. of India for being in top 800 students from all over India.

## RELEVANT COURSES UNDERTAKEN

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Natural Language Processing <sup>1</sup>	-	Introduction to Machine Translation	A
Linear Algebra	A	Probability and Statistics	A-
Fundamentals of Linguistics	A	Computer Programming	A

## PROJECTS

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### Reinforcement Learning in Non-stationary environments Aug 2018 - Present

- Proposed an algorithm “UCCRL-KD with restarts” for non stationary environments with continuous state space and gave upper bound on its regret. Currently, working on finding the lower bound.
- Additionally developed an algorithm based on learning and maintaining multiple partial models of the environments.

### Hypernym Discovery Oct 2017 - Jan 2018

- Participated in Shared Task 9: Hypernym Discovery of SemEval-2018.
- Submitted system based on iterative extraction approach in *Probase: A Probabilistic Taxonomy for Text Understanding* and beat the baseline models in most of the subtasks.
- Implemented and experimented with the approach of specifically learning word embeddings for hypernym discovery mentioned in *Learning Term Embeddings for Hypernymy Identification*.

### Automatic Essay Grader Aug 2017 - Oct 2017

- Worked on the task of building system which could automatically grade essays.
- Implemented LSTM based neural network architecture based on the proposed model in *Automatic Text Scoring Using Neural Networks..*

## TECHNICAL SKILLS

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Languages	Python, Java, C, C++
Technologies	PyTorch, AllenNLP, scikit-learn, Git, L <sup>A</sup> T <sub>E</sub> X, Linux
Areas of Interest	Natural Language Processing, Reinforcement Learning, Deep Learning

## OTHER ACHIEVEMENTS

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- Stood third in an hackathon open for all employees in IBM Research India. Won the best poster award among interns at Delhi.
- Won a bronze medal in Star Cluster Identifier, an astrophysics based event involving data analysis in 7th Inter IIT Tech Meet.
- Stood 6th in Optimal Bidding, a stochastic dynamic optimisation event in 6th Inter IIT Tech Meet.
- Stood 1st among 560 participants in Codefest Linguipedia 2018, an online Natural Language Processing hackathon on sentimental analysis of tweets towards products.
- Stood 5th among 468 participants in Codefest Linguipedia 2017, an online Natural Language Processing hackathon on hate speech detection in tweets.

## VOLUNTEER EXPERIENCE

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- Leading a team of nine student executive members of Mathematics and Computing Society as the Vice-President.
- Successfully organised workshops, hackathons and a summer school on Machine Learning and Data Science as the Joint Secretary of Club of Programmers – the programming club of the institute.

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<sup>1</sup>Ongoing