

Abhishek Sharma

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EDUCATION

- **Indian Institute of Technology, Banaras Hindu University** Varanasi, Uttar Pradesh
Integrated Dual Degree (B.Tech, M.Tech) in Mathematics and Computing; CPI: 9.17 *July 2016 – Present*
- **Ahlcon Public School** Mayur Vihar, Delhi
Class XII Board Examination; 97.20% *2016*
- **Ahlcon Public School** Mayur Vihar, Delhi
Class X Board Examination; CGPA: 10.0 *2014*

ACHIEVEMENTS

- 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.
- Awarded with JSTS scholarship for securing state rank 78 in JSTSE by Directorate of Education, Delhi.

PUBLICATIONS

- Abhishek Sharma, Ganesh Katrapati and Dipti Misra Sharma. IIT(BHU)–IIITH at CoNLL–SIGMORPHON 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>

PROJECTS

- **Morphological Inflection** Summer Internship
Supervisor: Dr. Dipti Misra Sharma (Head - LTRC, IIIT Hyderabad) *May 2018 - July 2018*
 - Participated in Task 1 of CoNLL–SIGMORPHON 2018 Shared Task: Universal Morphological Reinflection.
 - The task was to build a system which given a lemma and a set of morphological tags generates the inflected form.
 - Formulated the task as sequence to sequence learning (seq2seq) problem.
 - Used Encoder-Decoder based architecture with separate attention distributions over lemma and morphological tags; experimented with combining the context vectors using Hierarchical Attention.
 - Incorporated Pointer Generator network to facilitate copying of characters from the lemma.
 - Experimented with training attention using external alignment information to make network learn attention properly over smaller dataset.
 - 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.
- **Hypernym Discovery** *Oct 2017 - Jan 2018*
Supervisor: Dr. A. K. Singh, IIT (BHU), Varanasi
 - Participated in Shared Task 9: Hypernym Discovery of SemEval-2018.
 - In this task, given an input term and a corpus, the model had to retrieve its suitable hypernyms.
 - Used probabilistic framework bootstrapping on previous knowledge to discover new hypernymy pairs.
 - Beat the baseline models in most of the subtasks.
- **State dependent bulk service queue with Markovian Arrival** Exploratory Project
Supervisor: Dr. Anuradha Banerjee, IIT (BHU), Varanasi *August 2017 - November 2017*
 - Mathematically modelled Queue with Markov Arrival Process and bulk service with varying size of batches and the service time distribution dependent on various factors.
 - **Exposure:** Markov Arrival Process, Bulk service, Markov Chain, Stochastic Process

OTHER PROJECTS

- **Automatic Essay Grader:** Used LSTM based neural network architectures to build a model which could accurately grade essays. Matched state of the art accuracy for the particular dataset.

PROGRAMMING SKILLS

- **Languages:** Python, Java, C, C++
- **Technologies:** PyTorch, scikit-learn, Git, NumPy, Pandas, Latex, Linux
- **Areas of Interest:** Natural Language Processing, Reinforcement Learning, Deep Learning

EXTRA CURRICULAR ACTIVITIES

- **Club of Programmers:** Joint Secretary of Club of Programmers (COPS), IIT (BHU) Varanasi. Responsible for organising events, workshops, competitions and fostering coding culture in the institute.
- **Optimal Bidding:** Stood 6th in Optimal Bidding, a stochastic dynamic optimisation event held in Inter IIT Tech Meet 2018. Designed a neural network architecture based on the data to make optimal bid. Trained it using Gradient Descent. Exposure: Time series analysis, ARIMA time series model, Gradient Descent.
- **Codefest Linguipedia:** Stood 1st among 560 participants in Codefest Linguipedia, a Natural Language Processing (NLP) online hackathon on sentimental analysis of tweets towards products.