

# Abhinav Singh

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## EDUCATION

**The Johns Hopkins University, USA**

**2018-2019(expected)**

Master of Science, Computer Science

Courses: Machine Learning, Machine Translation, Natural Language Processing

**National Institute of Technology Kurukshetra, India**

**2012- 2016**

Bachelor of Technology, Information Technology

Courses: Data Structures, Algorithms, Software Engineering

**DeepLearn'17 summer school, Bilbao([link](#))**

**2017**

Attended a rigorous Deep Learning summer school taught by some of the finest professors in the domain.

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## TECHNICAL SKILLS

Frameworks and libraries: Tensorflow, Theano, Pytorch, nVidia CUDA, NumPy / SciPy, boost

Programming languages: experienced in: Python, C, C++ and familiarity with: Java, Matlab, R

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## WORK EXPERIENCE

**JHU Center for Language and Speech Processing, USA— *Research Assistant* Jan 2019 - Present**

Working with Prof. Benjamin Van Durme on Sentence Representation and Semantics.

**Liv.ai** (Acquired by Walmart), India— *Research Software Engineer*

**June 2016 - June 2018**

Worked on a variety of NLP problems, such as:

- Machine Translation: Built a neural machine translation system in Tensorflow based on seq2seq learning.
- Text To Speech :Developed a TTS system comprising of CNN, LSTM and Resnets, with Gaussian Mixture models for attention
- Gappi Transcription Chat App : Developed Neural Network to enables speech to text processing.
- Named Entity Recognition: Built NER system for intent classification (eg. Cab booking, Flight booking), using Conditional Random fields and stacked LSTMs.
- Character level Language Models :Built proprietary language models using stacked CNNs and LSTMs .
- Regularization using Generative Adversarial Networks:Utilised GANs for the purpose of regularization of our DNNs using adversarial perturbations.
- Tree LSTM: Leveraged meta-information present in semantic trees to create an LSTM as a semantic tree to construct a Language Model.

**Indian Institute of Technology Delhi**, India — *Summer research intern*

**June 2015 - July 2015**

Conducted research in frequent itemset mining with algorithms such as pincer search and Apriori Algorithms for analysing checkout carts of a major retailer in India.

**Indian Institute of Technology Delhi**, India — *Summer research intern*

**June 2014 - July 2014**

Developed distributed programs capable of running on inhouse supercomputer for drug design. Developed modules for Weiner index and Molecular volume calculation for their drug development software suite “Sanjeevani”.

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## ML PROJECTS

**Paraphrase Detection([link](#))**

Implemented an unorthodox CNN based model in tensorflow to recognise paraphrased sentences and detect duplicates.

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## PUBLICATIONS

Mobility and Energy Conscious Clustering Protocol for Wireless Networks, ICICT 2015[[Publication](#)][[PDF](#)]

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## LANGUAGES

English (Fluent), Hindi (Fluent)