# Abhinav Singh

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## EDUCATION

**The Johns Hopkins University, USA** **2018-2020**
Master of Science, Computer Science (Specialization NLP + ML) **GPA: 3.72/4.0**
Courses: ML, Machine Translation, NLP, CV, Parallel Programming
**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**

## TECHNICAL SKILLS

Frameworks and libraries: Tensorflow, Pytorch, Spark, NumPy/SciPy, CUDA, Theano, Boost
Programming languages: **Experienced** in: Python, C, C++ ; **Familiar** with: Java, R

## WORK EXPERIENCE

**Bloomberg LP,** USA— *Software Engineer Intern (NLP)* **June 2019 - August 2019**

Anomaly detection model for detecting service outages by analysing customer chats. Model was able to detect 85% of critical failures before manual oversight.

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

Analysing the effect of utilizing paraphrastic information in improving contextual embedding models like BERT with Prof. Benjamin Van Durme. Work published in CoNLL.

**Liv.Ai** (Acquired by **Walmart),** India— *Research SDE* **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 infrequent 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 parallel processing distributed programs running on inhouse supercomputer for Weiner index and Molecular volume calculation.

## ML PROJECTS

**Paraphrase Detection**(link)
Implemented an unorthodox CNN based model in tensorflow to recognise paraphrased sentences and detect duplicates.

## PUBLICATIONS

Large-scale, Diverse, Paraphrastic Bitexts via Sampling and Clustering, **CoNLL 19**
Mobility and Energy Conscious Clustering Protocol for Wireless Networks, ICICT 2015[Publication][PDF]

## LANGUAGES

Fluent: English , Hindi