

# Hitesh | Curriculum Vitae

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Personal website: <https://hitzkrieg.github.io/website/>

## Experience

- Flipkart** **Bangalore**
  - Software Development Engineer (Data Science), Apr 2019–present
- AI-NLP-ML Lab** **IIT Patna**
  - Junior Research Fellow, Aug–Dec 2018
- NLP Lab - Bar Ilan University, Israel** **Ramat Gan, Israel**
  - Research Internship, May–July 2017
- AI-NLP-ML Lab** **IIT Patna**
  - Undergraduate Research, May 2016–June 2018

## Education

- Indian Institute of Technology Patna** **Patna**
  - B.Tech. Computer Science and Engineering (CGPA: 8.56), July 2014– May 2018

## Publications

- Mauajama Firdaus, Hitesh Golchha, Asif Ekbal, and Pushpak Bhattacharyya. 2020. A deep multi-task model for dialogue act classification, intent detection and slot filling. *Cognitive Computation*, pages 1–20.
- Hitesh Golchha, Mauajama Firdaus, Asif Ekbal, and Pushpak Bhattacharyya. 2019. Courteously yours: Inducing courteous behavior in customer care responses using reinforced pointer generator network. In *Proceedings of the 2019 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies, Volume 1 (Long and Short Papers)*, pages 851–860.
- Hitesh Golchha, Deepak Gupta, Asif Ekbal, and Pushpak Bhattacharyya. 2018. Helping each other: A framework for customer-to-customer suggestion mining using a semi-supervised deep neural network. In *15th International Conference on Natural Language Processing*, page 196.

## Research

- NLU for Flipkart App's Bilingual Voice Assistants** **Flipkart**
  - SDE - Data Science** April 2019 - present
    - Slot Filling: BERT, CharCNN models
    - Intent detection: handle class imbalance, miscalibration, misprediction between unrelated classes
    - Multi-intent sentence segmentation: Train/integrate into pipeline
    - Improving Speech to Text output using re-scoring of beams
- Style Transfer on Response Generation (NAACL-HLT'19)** **IIT Patna**
  - Junior Research Fellow** under Dr. Asif Ekbal and Prof. Pushpak Bhattacharyya Oct 18 - Dec 18
    - Task: Transform generic responses to courteous while being contextually coherent.
    - Attention based seq2seq model, with Pointer Generator is used. Decoder is conditioned on conversation history
    - Trained using MLE + Policy gradients. Large scale Parallel data is prepared by filtering courteous sentences/expressions from real conversations on Twitter handle of companies.
- Multi-Task Learning for NLU (Cognitive computing, 2020)** **IIT Patna**
  - Junior Research Fellow** under Dr. Asif Ekbal and Prof. Pushpak Bhattacharyya Aug-Sep 2018
    - We develop a Multi-task model to identify the intent, dialog act and slot values on three benchmark datasets.
    - We experiment with Character embeddings, self-attention, linguistic embeddings, and different encoders
    - We also experiment with alternating training methods for multi-domain training

- Customer-to-Customer Suggestion Mining (ICON'18)** **IIT Patna**

◦ **B. Tech. Thesis** advised by Prof. Pushpak Bhattacharyya and Dr. Asif Ekbal Aug 2017 - May 2018

  - Objective is to extract customer to customer suggestions from online reviews
  - We develop a semi-supervised learning approach using self-training over a Deep learning based classifier which uses features extracted from three components: LSTM - attention, CNN Encoder, Linguistic features
  - Future work includes extending the system to more robust Semi supervised learning algorithms.
- Proposition coreference resolution for OKR** **Bar Ilan University, Israel**

◦ **Research Internship** advised by Prof. Ido Dagan May 2017 – July 2017

  - OKR: A semantic pipeline generating natural language knowledge graphs by consolidating extracted information from multiple unstructured texts.
  - Developed an online clustering algorithm based of pairwise comparison of propositions using fuzzy string matching, wordnet synset overlap, and presence of entity coreference between arguments.(improvement CONLL 0.56 to 0.65)
- Question Answering from Wikipedia articles** **IIT Patna**

◦ advised by Dr. Asif Ekbal August 2016 - April 2017

It was my first research project. We worked on the WikiQA dataset, aiming to find the answer spans from given relevant Wikipedia articles. We implemented an architecture which used a multi layer perception over the question and potential answer features encoded by LSTM network.

## Academic Projects

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- **Short survey on Deep reinforcement learning** 'Coursework Project for CS702 Advances in Algorithms'

We as a team of two, first reviewed the formalisms of reinforcement learning, and the basic algorithms of RL. We then discussed the algorithms of Deep Reinforcement learning through case studies of three papers

- **Hardware Mini Project** 'Coursework Project for CS421 Computer Peripherals and Interfacing'

We as a team of two members developed an RFID based entry exit system, proposing an alternative to the current security system in the University. The server and database was hosted on cloud9 and we interfaced the RFID card sensors, LCD display and keypad matrix with Raspberry Pi.

- **EDUBEE** 'Coursework Project for CS203: Software Engg Course'

We as a team of six members developed an educational website by the name of Edubee. This website allows anyone to design and host their own course, alongwith assignments, projects and online coding problems. Users could also use the website for managing their projects and collaborating with fellow users. I was part of the design process and was also involved in the implementaton of the search of the webiste.

## Technical skills

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- **Programming Languages:** Proficient in: Python, Java, C. Also proficient in Python Libraries : Numpy, Scikit-Learn, Matplotlib, Tensorflow, Keras, Spacy.

Familiar with C++, Matlab, HTML, CSS, PHP, SQL. Also familiar with python Libraries: OpenCV, PyTorch.

## Interests and extra-curricular activity

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- **Cricket:**

I have been playing cricket since I was 13 years of age, and have got the opportunity to represent Don Bosco School Guwahati and IIT Patna in several tournaments.

- **Dramatics, Anchoring, Technical Clubs:**

I have been a member of a few societies in my undergraduate years, which include Dramatics, Robotics and NJACK(Not just any Computer Club). I have also had the opportunity to anchor different cultural events in IIT Patna, which include Asian Conference on Solid State Ionics-2016, Anwasha-2016, and Reverberance-2015.

- **Technical Co-ordinator,Anwasha:**

I have also had the privilege of being the Technical Co-ordinator of Anwasha, the annual Techno-Cultural Intercollegiate Festival of IIT Patna organised by the student fraternity.