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## EDUCATION

Masters in Computer Science, **University of Massachusetts Amherst, Amherst, MA USA**(Fall ‘17 –Spring’19)

**Current Coursework (Spring’19):** Distributed Operating Systems

**Completed Coursework:** *Probabilistic Graphical Models, Algorithms for Data Science, Advanced Machine Learning, Natural Language Processing, Information Retrieval, Reinforcement Learning*

**GPA - 3.78/4**

B.Tech in Electrical Engineering, **Indian Institute of Technology(IIT)- BHU, Varanasi, India** (Fall ’09 – Spring ’13)  
Coursework: Data Structure and Algorithms, Probability Theory, Calculus, Vector Algebra

## PATENTS & PUBLICATIONS

- **US 20160110849 A1-** **“Method and Apparatus for Storing, Processing and Reconstructing Full Resolution Image out of Sub Band Encoded Images.”**

## WORK EXPERIENCE

### **Comcast Research Labs, Washington DC, USA (May’18-Aug’18)**

***Research Intern***

- Developed an architecture for entity disambiguation.

- Conceived and implemented an algorithm for entity recommendation using Knowledge graphs.

- Presented the proof of concept of the above with use cases for Xfinity X1.

### **Samsung Research India, Bangalore, India (Jun ‘13 – Jul ‘17)**

***Lead Engineer* Apr’17- Jul’17| *Sr. Software Engineer* Apr’14- Mar’17| *Software Engineer* Jun’13 – Mar’14**

**CNN Model Design, Development and Optimization for Samsung BIXBY** (Jan’17 – Jul’17)

- Developed the character CNN model of Samsung Bixby for product launch of Galaxy S8.

- Optimized the model thereby improving precision by ten percent.

**SC-LSTM based Natural Language Generation IP** (Mar’16 – Dec’16)

- Developed the natural language generation IP using SC-LSTM for Smart Assistant.

**Context Based Inference Engine IP** (Jul’15 – Feb’16)

- Developed context-based inference engine which deduces the activities in a SMS/WhatsApp conversation and analyses the user sentiment. This culminated into App release for Samsung India Market – ‘JifiCal’.

**Knowledge Base Engine** (Mar’15 –Jun’15)

- Designed and developed the knowledge base engine based on causality of events.

**Sluggishness detection in Smartphone** (Dec’14 – Feb’15)

- Conceived and implemented proof of concept of sluggishness detection in smartphones using deep learning.

**Image Compression IP for Camera Sensor Data and Sensor to Display Pipeline** (Jun’13 – Aug’14)

## CURRENT PROJECTS

**Entity Set Expansion, CIIR, UMass Amherst, Guide: Professor James Allan** (Oct’18 – Present)

- Currently researching on unsupervised methods for entity set expansion on a corpus given a seed set of entities.

- Conceived and implemented a shared LSTM supervised approach to solve the entity set expansion problem.

- Created the complete end to end data pipeline from scratch.

**GO Evidence Code Classification, UMass Amherst, Oracle Labs** [[Report]](https://drive.google.com/file/d/1hR2hzlVfuuHuYe-h63Ei_loSqhhJ6Dgp/view?usp=sharing) [[GitHub]](https://github.com/heisenbugfix/GO_Evidence_Classification/tree/develop)(Jan’17 – May’18)

- Designed a classifier to identify what type of evidence to assign to a Gene Ontology (GO) annotation.

- Developed Hierarchical Attention Model and TF-IDF model to create document embedding for abstracts.

**Rowless Universal Schema, UMass Amherst, IESL Lab** [[Report]](https://drive.google.com/open?id=18MaF9EN73Z3yZlNbsTZBBpHKLT3IgSCb) [[GitHub](https://github.com/heisenbugfix/rowless_schema_with_complex_embeddings/blob/master/code/model.py)](Nov ‘17 – Jan’17)

- Improving Rowless Universal Schema Knowledge Base using Complex Embedding.

- Designed and developed the shared LSTM architecture with complex embedding for relations and sentences.

## TECHNICAL SKILLS

**Languages:** JAVA, Python

**Tools** **and Frameworks:** TensorFlow, spaCy, Sci-Kit, Numpy, Scipy, Spark, Docker, Git, Agile, AWS, Theano

## Extracurricular activity

- MS Social Chair for Spring’18