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## ASHISH RANJAN

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### EDUCATION

MS 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**

**Advanced Technology Lab**

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

- Developed and optimized the core model components of Samsung Bixby for product launch of Galaxy S8.

**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.

**C-LAB Competition**

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

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

**Multimedia HWIP Team**

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

- Designed and implemented Scalable HW IP to decode high resolution compressed Bayer images.
- Worked on various Image Processing algorithms for storing and processing high resolution multimedia data.

### CURRENT PROJECTS

**Set Membership, CIIR, Guide: Professor James Allan** (Oct'18 – Present)

- Currently researching on new methods to do set expansion given a non- topical query.

**GO Evidence Code Classification, Oracle Labs** [\[Report\]](#) [\[GitHub\]](#) (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.

**IESL Lab, UMass Amherst, Guide: Professor Andrew McCallum** [\[Report\]](#) [\[GitHub\]](#) (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, Sci-Kit, Numpy, Scipy, Spark, Docker, Git, Agile, AWS, Theano

### EXTRACURRICULAR ACTIVITY

- MS Social Chair for Spring'18