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ASHISH RANJAN

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EDUCATION

MS in Computer Science, ***University of Massachusetts Amherst*** (Fall '17 –Expected Spring'19)
Current Coursework: *Advanced Machine Learning, Natural Language Processing*
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

Samsung Research India, Bangalore, India (June '13 – July '17)
Lead Engineer April'17- July'17 | *Sr. Software Engineer April'14- March'17* | *Software Engineer June'13 – March'14*
Advanced Technology Lab
***Conv Neural Net* Model Design, Development and Optimization for Samsung BIXBY** (January'17 – July'17)
- Developed and optimized the core model components of Samsung Bixby (Samsung AI) for product launch of Galaxy S8.
- Designed and developed deep learning based text classification models using CNN for product launch of Galaxy S8.

***SC-LSTM* based Natural Language Generation IP** (March'16 – December'16)
- Developed the natural language generation IP using SC-LSTM for Smart Assistant.

Context Based Inference Engine IP (July'15- February'16)
- Developed context-based inference engine which deduces the activities in a SMS/WhatsApp conversation (free-form natural language input) and analyses the user sentiment. This culminated into App release for Samsung India Market – 'JifiCal'.

Knowledge Base Engine (March'15 –June'15)
- Designed and developed the knowledge base engine based on causality of events.

C-LAB Competition
Sluggishness detection in Smartphone (December'14 – February'15)
- Conceived and implemented the proof of concept of sluggishness detection in smartphones using deep learning as part of the ideation competition.

Multimedia HWIP Team
Image Compression IP for Camera Sensor Data and Sensor to Display Pipeline (January '14 – August'14)
- Designed and implemented a Scalable, High Throughput HW IP to decode high resolution compressed Bayer images.
- Conceived and formally verified architectural improvements in design reducing the Gate Count by 4x.
- Worked on various Image Processing algorithms for storing and processing high resolution multimedia data.

Image Compression IP for Display (June '13 – December '13)
- Instrumental in algorithm optimization for a SPIHT based Image Encoder/Decoder in hardware.

CURRENT PROJECTS

IESL Lab, UMass Amherst, Guide: Professor Andrew McCallum (November '17 – Present)
- Improving Rowless Universal Schema Knowledge Base using Complex Embedding. [Report]

COMPSCI – 585 Natural Language Processing Project (November'17 – December'17)
- Character Identification on Multiparty Dialogues using Agglomerative Conv Neural Networks. [Report] (SemEval'18 Task - https://competitions.codalab.org/competitions/17310)

TECHNICAL SKILLS

Languages: JAVA, Python
Tools and Frameworks: TensorFlow, Theano, Git, Agile, Pycharm, Eclipse, IntelliJ, MATLAB, Maven, Jupyter Notebook, XML, JSON