Yelugam Pranay Kumar

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EDUCATION

University of Massachusetts — Amherst, MA
Master of Science in Computer Science (GPA: 4/4) — *Feb 2021 – Present*
Relevant course work: Distributed Systems, Machine Learning and Intelligence Visual Computing

Indian Institute of Information Technology — Allahabad, India
Bachelor of Technology in Computer Science — *Aug 2014 – July 2018*
Relevant course work: Data Structures and Algorithms, Operating Systems, Data Mining, Machine Learning, Artificial Intelligence

EXPERIENCE

Research Intern — **Advisors: Prof. Andrew McCallum & Xiang Lorraine Li** — Amherst, MA
Information Extraction and Synthesis Laboratory [link] — *May 2021 - Present*
- **Commonsense Frame Completion:** Working on commonsense knowledge reasoning.
  * Working on representation learning for commonsense knowledge, unsupervised frame extraction, multi-relation representation using box probabilistic representation.
  * Developing a dataset for commonsense question answering dataset using AMR representation of the context sentences.

Graduate Research Student — **Advisors: Prof. Andrew McCallum & Neha Kennard** — Amherst, MA
Information Extraction and Synthesis Laboratory [link] — *Feb 2021 - May 2021*
- **Discourse Structure:** Worked on problems in discourse structure at the document level.
  * Developed and annotated a large dataset of scientific peer review text to highlight discourse structure.
  * Developed classification and span selection models to automatically detect the discourse structure using this dataset.

Software Engineer, Samsung — Delhi, India
Unified Metadata Team — *July 2018 - Dec 2020*
- Applied Convolutional neural networks to find out if the movies/content from different content-providers are similar to increase congruency of content on Samsung TV.
- Developed a cast and poster based neural network classifier to further identify the different content from various content-providers. This has reduced the manual merging rate of conflicted content by 32%.
- Developed metadata-parsers in Scala which deals with daily ingestion of TV programs and schedules related to major streaming applications like TvPlus, Apple TV, Amazon Prime etc.
- Re-launched Search Data Exporter for the content in Samsung search with 12% reduced latency and introduced new features to eliminate the image mixing problem for a program from different content-providers.

PUBLICATIONS

Y.Pranay Kumar, Bharadwaju, K. Anudeep, A. Vamshi Krishna, Bakshi Rohit Prasad, Sonali Agarwal "Real time mining of ego networks for exploring social associations" CICT, 2017

PROJECTS

PixeltoVoxel | *Python, PyTorch, CNNs* — Spring 2021
- Improved upon the existing Pix2Vox for converting the single/multiple images of the object to 3D representations of the objects using a encoder, decoder architecture. The model is trained on the ShapeNet dataset. The resultant model performed better when evaluated on Intersection Over Union metric.

Exploring Circles in Ego Networks | *Python, Flask, PageRank Algorithm and Clustering Algorithms* — Fall 2016
- Proposed and developed clustering based approach for mining of ego networks to explore ego's social associations and rank them using PageRank.

Co-Authorship Analysis | *Python, Networkx, Link Prediction Algorithms* — Spring 2017
- Implemented a Link Prediction approach to create a recommender system that helps in finding potential collaborators for an author.

LANGUAGES AND TECHNOLOGIES

- **Python**: PyTorch, scikit-learn, pandas, numpy, NLTK, matplotlib
- **Others**:C/C++, Java, Scala, JavaScript, PostgreSQL, ReactJS, Redux, Akka, Git, AWS (EC2, S3), Google Colab

ACTIVITIES AND ACHIEVEMENTS

- Awarded Best Intern at RoadPiper Technologies, Mumbai
- Awarded Spot Award for best performance in a quarter at Samsung Research Institute, Delhi
- Member of the National Sports Organization in Badminton at IIIT Allahabad