Ameya Godbole

ameyag416@gmail.com | +1 (617) 676-8873
ameyagodbole.github.io | LinkedIn://ameyag416 | Github://ameyagodbole

EDUCATION

UNIVERSITY OF MASSACHUSETTS AMHERST Amherst, MA | Aug 2018 - May 2020
MS in Computer Science (GPA: 4.0/4.0)

IIT (INDIAN INSTITUTE OF TECHNOLOGY) GUWAHATI Guwahati, India | Aug 2014 - May 2018
B.Tech in Electronics & Communication Engineering (Major GPA: 9.15/10)
Minor in Computer Science & Engineering (Minor GPA: 8.8/10)

PUBLICATIONS

[1] R Das, **A Godbole** , N Monath, M Zaheer and A McCallum. **"Probabilistic Case-based Reasoning for Open-World Knowledge Graph Completion "** . Findings of EMNLP 2020
[2] R Das, **A Godbole** , S Dhuliawala, M Zaheer and A McCallum. **"A Simple Approach to Case-Based Reasoning in Knowledge Bases"** . AKBC 2020 [Best Paper Runner-up]
[3] **A Godbole** *, D Kavarthapu*, R Das*, Z Gong, A Singhal, H Zamani, M Yu, T Gao, X Guo, M Zaheer and A McCallum. **"Entity-centric Information Retrieval for Multi-Hop Question Answering"** . MRQA-EMNLP 2019 [Best Paper]
[4] **A Godbole** *, R Das*, M Zaheer, S Dhuliawala and A McCallum. **"Reasoning over Chains of Facts for Explainable Multi-hop Inference"** . TextGraphs-EMNLP 2019 [Shared task 1st place entry]
[5] **A Godbole** *, S Bhat* and P Guha. **"Progressively Balanced Multi-class Neural Trees"** . NCC 2018
[6] **A Godbole** , A Dalmia and S Sahu. **"Siamese Neural Networks with Random Forest for detecting duplicate question pairs"** . arXiv

EXPERIENCE

INFORMATION EXTRACTION AND SYNTHESIS LABORATORY Jun 2020 - Present | Amherst, MA
Research Fellow

- Contributor to the **OpenReview** conference platform most recently used to host **ICLR 2021** .
- Contributor to **OpenReview Expertise** which generates affinity scores between submitted papers and available reviewers. Incorporated a language model based system which computes similarity between the reviewers' past body of work and the new conference submissions.
- Contributor to **OpenReview Matcher** which solves an optimization problem to assign papers for review given pre-computed affinity scores. Added features to the fairness-constrained matching algorithms.
- Contributor to the affiliation disambiguation system as part of IESL's collaboration with the **Chan Zuckerberg Initiative** . Attempting to scale the system to **400K+** target affiliation labels.

SRI INTERNATIONAL May 2019 – Aug 2019 | Menlo Park, CA
Machine Learning Intern

- Member of a team of researchers from the **Artificial Intelligence Center (AIC)** participating in the **DARPA** program: Radio Frequency Machine Learning Systems **(RFMLS)** .
- Applied and benchmarked **reinforcement learning** & **imitation learning** based approaches to control an antenna array for RF monitoring showing improvements over existing baselines.

CENTRE FOR DEVELOPMENT OF ADVANCED COMPUTING May 2016 – July 2016 | Pune, India
Software Development Intern

- Designed and contributed to a molecular dynamics simulator at CDAC.
- Studied the principles of parallel computing and implemented the same with MPI to make a simulator capable of utilizing the processing capabilities of a CPU cluster for particle dynamics simulations.

PROJECTS

CASE-BASED REASONING

IESL, UMass Amherst — Jan 2020 – Present

- Applied the principles of case-based reasoning to knowledge graph completion by retrieving reasoning paths from similar entities and applying to the query entity, resulting in a simple, interpretable and performant system.
- Imposed a probabilistic framework to weight paths using prior and precision, resulting in a system that matches/outperforms baselines.
- Demonstrated the utility of the framework on **dynamically growing knowledge graphs** where baseline method performance deteriorates.

DATA CENTER ENERGY PORTFOLIO OPTIMIZATION

Dr. Mohammad Hajiesmaili & Dr. Philip Thomas, UMass Amherst — Aug 2019 – Apr 2020

- Data center energy demand and supply cost are time-varying, opening the scope for optimization.
- Framed the task of energy procurement as a reinforcement learning problem to control an onsite battery.
- Demonstrated that **imitation learning** approaches perform better than **reinforcement learning** for this task.

ENTITY-CENTRIC INFORMATION RETRIEVAL

IESL, UMass Amherst — Jan 2019 – May 2019

- Developed a document retrieval technique that uses information of entities present in the initially retrieved evidence to learn to 'hop' to other relevant evidence.
- In a setting, with more than **5 million** Wikipedia paragraphs, our approach leads to significant boost in retrieval.
- The retrieved evidence also increased the performance of an existing QA model (without any training) on the HotpotQA benchmark by **10.59 F1** .
- Won **1st place at TextGraphs 2019** by applying the same principles to Explanation Regeneration.

PROGRESSIVELY BALANCED MULTI-CLASS NEURAL TREES — Github Repository

Dr. Prithwijit Guha, Dept. of EEE, IIT Guwahati — Aug 2017 – May 2018

- Proposed and tested an entropy impurity based objective function for incorporating a learnable perceptron into the decision tree framework.
- The learned classifier achieves comparable accuracy with fewer test time computations than an MLP.

SCHOLASTIC ACHIEVEMENTS

Secured merit-based change of discipline from Electronics and Electrical Engineering to Electronics and Communication Engineering in July 2015

Secured All India Rank 1893 in JEE Advanced 2014 (out of 126k)

Secured All India Rank 547 in JEE Mains 2014 (Percentile score: 99.87)

Qualified for the state level of the Regional Mathematics Olympiad by securing top position in the Mumbai Regional stages of 2013 and 2012

COURSEWORK

GRADUATE

- AI: Artificial Intelligence, Reinforcement Learning, Probabilistic Graphical Models, Machine Learning, Automated Knowledge Base Construction
- Systems: Distributed & Operating Systems
- Theory: Algorithms for Data Science, Advanced Algorithms

UNDERGRADUATE

- Machine Learning: Spoken Language Systems, Computer Vision, Pattern Recognition & Machine Learning
- Electronics & Communication: Advanced Topics in Random Processes, Information Theory & Coding, Image Processing, Communication Networks
- Mathematics: Mathematical Techniques for Control and Signal Processing, Linear Algebra, Mutivariable Calculus, Differential Equations