Goutham **Ramakrishnan**

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Education

UNIVERSITY OF WISCONSIN-MADISON
MS in Computer Science
Aug 2018 - May 2020 (Expected)
GPA: 4.0/4.0

IIT BOMBAY
B.Tech in Electrical Engg. (minor in Computer Science)
Jul 2014 - May 2018
GPA: 9.29/10.0

Technical Skills

PROGRAMMING
- Proficient in Python
- Familiar with C++, Java, SQL

TOOLS AND LIBRARIES
- Tensorflow • PyTorch • Keras
- NumPy • MATLAB • LaTeX • SAS

Coursework

Machine Learning
Reinforcement Learning
Mathematical Foundations of ML
Security and Privacy for ML
Deep Learning in Computer Vision
Natural Language Processing
Bayesian Methods for ML
Data Structures and Algorithms
Operating Systems
Discrete Structures
Computer and Network Security
Nonlinear Optimization

TEACHING ASSISTANT
- CS-301 (Data Programming) Fall 2018, UW-Madison
- MA-207 (Differential Equations) Fall 2016, IIT-Bombay

Achievements

- All India Rank 959 in JEE Advanced 2014
- School Topper in Grade X and XII

Links

goutham7r
goutham-ramakrishnan

Work Experience

MICROSOFT RESEARCH | Researcher Intern
June 2019 – Sep 2019 | Cambridge, United Kingdom
- Developed an end-to-end framework for discovering and versioning sensitive files across a project cycle, for easing data compliance in healthcare research

AMERICAN EXPRESS | Data Analyst Intern
May 2017 – July 2017 | Gurgaon, India
- Analyzed customer data and isolated inefficiencies in existing manual underwriting procedures. Designed a unified global framework for manual underwriting

Research

Robustness of Code NN Models to Semantic-Preserving Transforms
Ongoing | Guide: Prof. Aws Albarghouthi, UW-Madison
- Examining the robustness and interpretability of neural network models trained on source code tasks, using semantics-preserving program transformations.

BAE : BERT-based Adversarial Examples for Text Classification
Fall 2019 | Guide: Prof. Justin Hsu, UW-Madison
- Proposed novel adversarial attack technique for NLP, using the BERT Masked-LM
- Our attack is stronger than previous baselines, while ensuring better semantic coherence and grammatical correctness

Synthesizing Action Sequences for Modifying Model Decisions
Spring 2019 | Guide: Prof. Aws Albarghouthi, UW-Madison
- Formulated framework for obtaining realistic and actionable feedback from neural network models for modifying their classification, through adversarial optimization
- **Research paper accepted at AAAI-2020**

Interpretable Inference Graphs for Face Recognition
Spring 2019 | Guide: Prof. Yin Li, UW-Madison
- Investigated the interpretability of adaptive inference graphs on the task of face recognition. Proposed novel loss function for learning interpretable inference graphs, by incorporating additional feature annotations during model training
- **Poster presented at MMLS-2019. Research paper accepted at IVCNZ-2019**

Fast Color Normalization for Digital Pathology
Fall 2017 | Guide: Prof. Amit Sethi, IIT Bombay
- Implemented color normalization of histopathological WSI images in TensorFlow, with robust patch sampling, background intensity matching and efficient disk I/O
- **Research paper published at IWSSIP-2019**

Deep Differential Q-learning
Fall 2017 | Guide: Prof. Shivaram Kalyanakrishnan, IIT Bombay
- Developed novel deep RL model based on the Differential Training (Bertsekas-1997)

Other

- **Volunteering:** Taught maths to underprivileged students at Abhyasika, Mumbai
- **Hackathon**: Part of winning team in Microsoft (UK) Hackathon, 2019
- **Institute Student Mentor**, IIT Bombay (Apr 2017-May 2018)
- **Sports:** Represented IIT-Bombay in Soccer at the 51st Inter-IIT Meet (Silver Medal)