Meghana Moorthy Bhat **(updated September 2, 2019)**

Contact Information

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Research Interests

NLP, Information Retrieval and graphical models.

Education

Ohio State University, Columbus, OH, USA

Ph.D. in Computer Science August 2019 - May 2024 (Expected)

Adviser: Prof. Srinivasan Parthasarathy

University of Wisconsin-Madison, *Madison, WI, USA*

Master of Science, Computer Science *Sep 2017 - May 2019*

(CGPA: 3.6/4.0)

Sri Jayachamarajendra College of Engineering (SJCE), *Mysore, India*

Bachelor of Engineering (Honours), Computer Science *Sep 2008 - Jun 2012*

(CGPA: 9.21/10)

Research Experience

Research Intern, *Mila, Montreal, QC*

Adviser: Prof. Laurent Charlin *June 2019 - August 2019*

TPMS: *Proposed methodology to assign reviewers for the submitted papers in conferences using Microsoft CMT.*
Methodology:

- *Document Representation: Explored and developed DL models for document representation.*
- *Evaluation: Performed evaluation in two different aspects: Clustering and supervised learning approach using fully connected neural network inspired from Siamese networks.*

Graduate Researcher, *UW-Madison, WI, USA*

Adviser: Prof. Theodoros Rekatsinas *Sep 2017 - Dec 2018*

- ***Error Detection and Correction using Deep Learning:*** *Proposed algorithms to perform error detection and correction for structured data using deep learning (DL).*
  Methodology:
  - *Models: Developed DL models using GRU for training embeddings across rows and columns*
  - *Tested the methodology for synthetic errors in real-world datasets consisting of null values, typos and shuffled attribute values.*
  - *Evaluation: Evaluated against few of the current state-of-the art methods like HoloClean*
- ***Approximate discovery of Functional Dependencies (FDs) using structure learning:*** *Explored different mechanisms with fellow lab-mates to derive FDs from a noisy dataset using structure learning.*
  Methodology:
  - *Mapped word to latent vector representation and used attention, logistic regression to obtain the high-level structure of potential FD candidates.*
  - *Developed mutual information estimator methods to obtain potential FD candidates from the previous step.*

– *Tested the accuracy of results against HoloClean for different noisy datasets.*

Professional Experience

MILA, *Montreal, QC, Canada*
Research Intern — *Jun 2019 - Aug 2019*

Qualcomm, *San Diego, CA, USA*
Machine Learning Intern — *June 2018 - Aug 2018*

Intel Corporation, *Bangalore, India*
Design and Software Engineer (Infrastructure and performance modelling) — *Jul 2012 - Jul 2017*

Papers and conferences

1. **Meghana Moorthy Bhat**, *Zhixuan Zhou "Fake News Detection via NLP methods becomes harder." Women in Machine Learning associated with NeurIPS 2019, Vancouver, BC, Canada (WiML)* ***(To Appear).***
2. **Meghana Moorthy Bhat**, *Yogesh Chockalingam, Manjunath NS "DeepRepair:A framework for error detection and correction." Montreal AI Symposium 2019, Montreal, QC, Canada (MAIS)* ***(To Appear).***
3. *Zhixuan Zhou, Huankang Guan,* **Meghana Bhat** *and Justin Hsu "Detecting Fake News with NLP: Challenges and Possible Directions." International Conference on Agents and Artificial Intelligence (ICAART) 2019.*
4. **Meghana Moorthy Bhat**, *Josef Eckmueller, Melwyn Scudder. "Performance Optimization of Virtual Prototypes." DTTC Intel, Portland, Oregon, USA 2015. (DTTC is Intel global internal conference)*
5. **Meghana Moorthy Bhat**, *Melwyn Scudder, Kartik Shah. "Virtual Prototype (VP) Quality Improvement Methodology." DvCon India, Bangalore, India, 2015.*

Projects

Fact Checking in Social Media
Ohio State University *(Adviser: Prof.Srinivasan Parthasarathy)* — *Sep 2019 - Present*
Developing a model for identifying trust relationship between entities based on conversations in social media.

Conversational modeling in Social Media
Ohio State University *(Adviser: Prof.Srinivasan Parthasarathy)* — *Sep 2019 - Present*
Modeling relation extraction from conversations in social media.

Detecting Fake News with NLP: Challenges and Possible Directions
UW-Madison *(Adviser: Prof. Justin Hsu)* — *Sep 2018 - Nov 2018*
Designed adversarial attacks that can 'fool' classification algorithms built on fact checking using NLP algorithms.

Snapdragon Neural Processor Engine (SNPE)
Qualcomm *(Adviser: Mark Charlebois)* — *June 2018 - Aug 2018*
Worked on enabling 8-bit CPU (Fixed point math) in SNPE for better performance in overall speed-up and lesser memory consumption for SNPE AI powered phones.

Entity Matching using Machine Learning and Deep Learning
UW-Madison *(Course: Data Science, with Prof. AnHai Doan)* — *Feb 2018 - Apr 2018*

Performed entity matching of books from raw data of Amazon and GoodReads using Magellan and DeepMatcher. Performed benchmark analysis of both the approaches to understand the respective trade-offs. Code

Speaker Detection Algorithm for Safer Home Project

UW-Madison *(Adviser: Prof. Suman Banerjee)* *Feb 2018 - Apr 2018*

As a team member of Safer Home project, extended Paradrop to incorporate speaker detection module using hidden markov process. The project Safer Home emerged as one of the winner teams in US Ignite challenge. Link

Performance Optimization for Virtual Prototypes

Intel Corporation *(Manager: Bharat Singh)* *Jan 2013 - Jan 2014*

Designed and developed a profiler system to identify potential performance bottlenecks. Also, performed data analysis on cache hits and misses. Received Department Recognition Award for the outstanding contribution.

Teaching Experience

Ohio State University, *Columbus, OH, USA*

Graduate Teaching Assistant *Aug 2019 - Present*

University of Wisconsin-Madison, *Madison, WI, USA*

Graduate Teaching Assistant *Jan 2018 - May 2018*

Technical Skills

Scientific Computing - Python (numpy, scipy, sklearn, PyTorch, TensorFlow, Keras)

General-purpose Programming & Others - Java, C++, SQL

Coursework

UW Madison

CS 839 Data Management for Machine Learning Applications
CS 839 Topics in Security
CS 838 Data Science: Principles, Algorithms, Applications
CS 760 Machine Learning
CS 765 Data Visualization

SJCE Mysore

Databases and Management Systems
Algorithms and Data Structures
Operating Systems
Introduction to Networks

Honours and Achievements

WiML Student Travel Grant

Qualcomm Hackathon Finalist - Award for Innovation, 2018.

Application development award from US Ignite for SAFER Home project.

Department Recognition Award, Intel Corporation for successful critical project completion, 2015.

Employee Recognition Award, Intel Corporation for acceptance of poster presentation in DvCon India, 2015.

Conferral of the Honours degree in CSE, SJCE Mysore, 2012 (Requires minimum of 8.5 CGPA throughout the last two years of undergraduate studies).

State Board Merit Scholarship, Karnataka Secondary Education Examination Board (KSEEB) India, for 4 years of undergraduate study covering 75% of undergraduate tuition fee, 2008-2012.

Ranked All India 780 out of 400,000 candidates in Common Entrance Test, 2008.

Extracurricular Activities

Carnatic classical vocalist - Performed over 300+ concerts across India and USA. Audio

Volunteered for Linux Club and SJCE music club during undergraduate studies to organize tech talks and events.