Subendhu Rongali

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EDUCATION

UNIVERSITY OF MASSACHUSETTS AMHERST
PhD in Computer Science
Expected April 2023 | Amherst, MA
GPA: 4.0/4.0

UNIVERSITY OF MASSACHUSETTS AMHERST
MS in Computer Science
Grad. May 2020 | Amherst, MA
GPA: 4.0/4.0

INDIAN INSTITUTE OF TECHNOLOGY MADRAS
BTech in Computer Science & Engineering
Grad. May 2014 | Chennai, India
GPA : 8.8 / 10

COURSEWORK

GRADUATE
Advanced Algorithms
Machine Learning
Reinforcement Learning
Probabilistic Graphical Models
Deep Learning/Natural Language Processing
Advanced Software Engineering

UNDERGRADUATE
Artificial Intelligence
Basic Graph Theory
Decision Models
Fundamentals of Operations Research
Introduction to Machine Learning
Natural Language Processing
Social Network Analysis

SKILLS

PROGRAMMING
Over 5000 lines:
Python • C# • C • Java • Javascript
Over 1000 lines:
C++ • Coq
Familiar:
MATLAB • R • Lisp • Prolog • MySQL

MACHINE LEARNING
Preferred frameworks:
PyTorch • MXNet
Other frameworks:
TensorFlow • Keras • Theano

RELEVANT WORK EXPERIENCE

AMAZON ALEXA AI | Applied Scientist Intern
Summer 2019, 2020, 2021 | New York City, NY
- I was part of the team that worked on the Spoken Language Understanding (SLU) System in the Alexa voice assistant. My projects were broadly on improving language understanding in Alexa and making it more resource efficient.
- Our work was published at WWW 2020, AAAI 2021, and IJCAI 2022.

IBM RESEARCH | Research Software Engineer
Oct 2014 – Sept 2015 | Bangalore, India
- Worked with Watson, Cognitive Research, and Smarter Planet Solutions teams on a number of research problems, both in-house and for clients.
- Published work in COMSNETS, SmartGridComm, and IEEE-ISGT.

CURRENT RESEARCH PROJECTS

- Low Resource Language Understanding in Voice Assistants
  Work with Prof. Andrew McCallum, in collaboration with Amazon Alexa AI
  This is my main project and the core of my dissertation work. We explore various data-related challenges in the language understanding system of voice assistants. We are currently exploring zeroshot domain adaptation for universal semantic parsing. In the past, we developed state-of-the-art semantic parsers, effective end-to-end language understanding models, and techniques to efficiently train semantic parsers using very little data.

- Unsupervised parsing with DIORA
  Work with Prof. Andrew McCallum.
  DIORA is a fully unsupervised tree induction method based on dynamic programming. My recent projects focused on improving the efficiency and applicability of the original algorithm.

RELEVANT PUBLICATIONS

- Training Naturalized Semantic Parsers with Very Little Data
  Subendhu Rongali, Konstantine Arkoudas, Melanie Rubino & Wael Hamza. IJCAI 2022

- Exploring Transfer Learning for End-to-End Spoken Language Understanding
  Subendhu Rongali, Beiye Liu, Liwei Cai, Konstantine Arkoudas, Chengwei Su & Wael Hamza. AAAI 2021

- Don't Parse, Generate! A Sequence to Sequence Architecture for Task-Oriented Semantic Parsing
  Subendhu Rongali, Luca Soldaini, Emilio Monti & Wael Hamza. The Web Conference 2020 (WWW '20)

- Unsupervised Parsing with S-DIORA: Single Tree Encoding for Deep Inside-Outside Recursive Autoencoders
  Andrew Drozdov, Subendhu Rongali, Yi-Pei Chen, Tim O'Gorman, Mohit Iyyer & Andrew McCallum. EMNLP 2020

SCHOLARSHIPS

- Sudha and Rajesh Jha Scholarship 2019.
  College of Information and Computer Sciences, UMass Amherst