

EDUCATION

UMass Amherst

PhD in Computer Science

Amherst, MA

Aug. 2018 – present

Stanford University

Master of Science in Computer Science; GPA: 3.74

Stanford, CA

Aug. 2013 – Jan. 2016

Birla Institute of Technology and Science, Pilani

Bachelor of Engineering in Computer Science; GPA: 8.87

Goa, India

Aug. 2009 – July. 2013

INDUSTRY EXPERIENCE

Facebook

Research Intern

Redmond, WA

May 2019 - August 2019

Question Answering Using Pytorch. Worked on domain adaptation for question answering. Participated in data collection. Carried out extensive evaluation.

Google

Software Engineer

Mountain View, CA

May 2017 - June 2018

Natural Language Generation Using Java and C++ on the Google Assistant

Google Research

Software Engineer

Mountain View, CA

Jan 2016 - May 2017

Deep Learning for Dialogue Worked on deep learning techniques for Natural Language Generation in dialogue. Published in Interspeech 2017. Implemented models in Python using Tensorflow.

Microsoft

International Project Engineering Intern

Redmond, WA

Jun 2014 - Sep 2014

Internationalization in MS Office Scaling NLP features in MS Office to apply to 6 additional human languages. Contributed to a C# code base.

PUBLICATIONS

Causal Matching with Text Embeddings: A Case Study in Estimating the Causal Effects of Peer Review Policies.

Raymond Zhang, Neha Nayak Kennard, Daniel Smith, Daniel McFarland, Andrew McCallum, and Katherine Keith. Findings 2023.

DISAPERE: A Dataset for Discourse Structure in Peer Review Discussions

Neha Nayak Kennard, Tim O’Gorman, Rajarshi Das, Akshay Sharma, Chhandak Bagchi, Matthew Clinton, Pranay Kumar Yelugam, Hamed Zamani, Andrew McCallum. NAACL 2022.

To Plan or Not to Plan? Sequence to sequence generation for language generation in dialogue systems

Neha Nayak, Dilek Hakkani-Tur, Marilyn Walker, Larry Heck. INTERSPEECH 2017.

Combining Natural Logic and Shallow Reasoning for Question Answering

Gabor Angeli, Neha Nayak, Chris Manning. Association for Computational Linguistics (ACL) 2016.

Evaluating Word Embeddings Using a Representative Suite of Practical Tasks

Neha Nayak, Gabor Angeli, Chris Manning. First Workshop on Evaluating Vector Space Representations for NLP (RepEval). ACL 2016.

RESEARCH EXPERIENCE

University of Massachusetts, Amherst

Amherst, MA

Graduate research projects supervised by Prof. Andrew McCallum

Sep 2018 - present

Discourse structure: Annotating a large dataset of scientific peer review text to highlight discourse structure and developing models to automatically detect this structure.

Coreference resolution: Examining out-of-domain performance of modern coreference resolution models, and developing mention representations that leverage whole-document context.

Taxonomy alignment: Using box embeddings to improve alignment of biomedical taxonomies. Implemented in PyTorch.

Stanford University

Stanford, CA

Graduate research projects supervised by Prof. Christopher Manning

Jan 2015-Dec 2015

Word vector evaluation (VecEval): Constructing a new evaluation benchmark for vector space models.

Developed a fair evaluation setup using Keras. See www.veceval.com. Published in RepEval workshop (in ACL 2016).

Hypernymy in word embeddings: Demonstrated shortcomings in extending existing lexical semantics techniques applied to hypernymy; presented alternatives. Implemented in Lua using Torch.

Meronymy in Natural Logic: Applying monotonicity reasoning over geographical meronymy for logical inference. Constructed a binary relation over places using Freebase. Contributed to ACL 2016 paper.

Stanford University

Stanford, CA

Class projects

Sep 2013 - Dec 2014

Alignment in neural models for NLI: Applied monolingual alignment techniques from traditional RTE to a novel vector space model for entailment. Contributed to a MATLAB codebase.

Detecting non-subjective adjectives: Used simple classifiers to identify problematic adjectives for logical inference. Detected exceptional cases of adjectival modification. Implemented in Python and Java using scikit-learn and Stanford's CoreNLP.

Institute for Natural Language Processing, University of Stuttgart

Stuttgart, Germany

Student researcher supervised by PD Dr. Sabine Schulte im Walde

May - July 2012, Jan - May 2013

Classifying lexical relations in English: Undergraduate Thesis : Automatic Classification of Semantic Relation Pairs in English Using Pattern-based Corpus Co-occurrence. Implemented in Python.

Classifying lexical relations in German: Investigated the possible use of higher-order co-occurrences for distinguishing between antonymy, hypernymy and synonymy. Utilized WEKA.

TEACHING AND MENTORSHIP

UMass: Head TA for Search Engines. Supervised 1 BS student and 9 MS students for independent studies. Supervised 4 groups (11 MS students total) for industry collaboration projects.

Stanford: TA for Natural Language Processing (Grad level); Introduction to Probability for Computer Scientists (two quarters); Mathematical Foundations of Computing (four quarters); Design and Analysis of Algorithms

BITS: TA for Computer Programming II, Discrete Structures for Computer Science, Theory of Computation

OUTREACH AND SERVICE

Undergrad Research Volunteers (Summer 2023) Supervised four undergraduate students.

CICS Grad Rep Represented graduate students at faculty meetings and participated in faculty hiring. 2022-2023.

UMass Amherst CS Women Treasurer of the graduate chapter of CS Women at UMass (2018-19). Graduate co-chair 2019-20. The organization was awarded a Women for UMass grant towards travel expenses for graduate students.

Community Outreach Student Team Founding member. 2019-20

Machine Learning and Friends Lunch Seminar organizer, 2018-2021

Black Girls Code, 2018 Assisted in teaching programming to girls aged 10-13 (Scratch, Python, Raspberry Pi)

SAILORS (Stanford AI Lab OutReach Summer) 2015 Developed curriculum and mentored 6 high school students to learn about Python and probability and produce a Naive Bayes classifier on emergency tweets in a two week program

CSSI (Computer Science Summer Institute) Interview coaching preparing rising freshmen for software internship interviews