

# Daniel S. Cohen

PH.D. CANDIDATE · INFORMATION RETRIEVAL

Amherst, MA, 01002, USA

✉ dcohen@cs.umass.edu | 🏠 www.cs.umass.edu/dcohen/

## Education

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### University of Massachusetts Amherst

MS/PHD IN COMPUTER SCIENCE

Amherst, MA

2015 - Present

### New York University

B.A. IN MATHEMATICS AND COMPUTER SCIENCE CUM LAUDE

New York, NY

2012 - 2015

## Research Experience

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### University of Massachusetts Amherst (Prof. W. Bruce Croft)

GRADUATE RESEARCH ASSISTANT

Amherst, MA

Sep. 2015 - Present

- Conduct research on question answering and passage retrieval models
- Develop representation methods for passage and cross lingual retrieval
- Analyze models for low resource language retrieval

### University of Massachusetts Amherst - IARPA MATERIAL Task

PROGRAM MANAGER

Amherst, MA

Sep. 2017 - Present

- Develop representation methods for passage and cross lingual retrieval
- Analyze models for low resource language retrieval

### Microsoft Research and AI (Dr. Katja Hofmann, Bhaskar Mitra)

PHD RESEARCH INTERN

Cambridge, UK

May 2017 - Aug. 2017

- Investigated the impact of temporal and market changes on query autocompletion and ad-hoc retrieval
- Created an adversarial model to learn a task agnostic neural representation for query completion

### New York University (Prof. Mohamed Zahran)

RESEARCH ASSISTANT

New York City, NY

June 2014 - Jan. 2015

- Developed an automatic detector and advice generator for solving bottlenecks in Graphics Cards
- Evaluations for the advice generated were done based on implemented metrics on a dynamic profiler

## Awards and Grants

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- 2018 **SIGIR Best Short Paper,**
- 2018 **SIGIR Student Travel Grant,**
- 2018 **Bloomberg Data Science Research Grant,** Co-writer
- 2016 **SIGIR Student Travel Grant,**
- 2016 **41st Undergraduate Research Conference Best Poster,** NYU

## Teaching Experience

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### HackUMass

MENTOR

Amherst, MA

Nov. 2017

- Provided insight and approaches using unsupervised, supervised, and RL neural models for over 1000 attendees

### University of Massachusetts Amherst, (David Fisher)

TEACHING ASSISTANT (446 - SEARCH ENGINES)

Amherst, MA

Spring 2016

- Assisted undergraduate students with core Information Retrieval concepts and methods
- Contributed questions to and graded exams and homework

## Varsity Tutors

TUTOR

New York City, NY

Jun. 2013 - Sept. 2015

- Assisted university and graduate students with understanding core concepts for programming, probability, abstract algebra, measure theory, statistics, and other subjects
- Rated top 1% of all tutors nationwide

## Service & Leadership

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- 2019 **PC Member**, TheWebConf Full Papers
- 2018 **PC Member**, EMNLP Full Papers
- 2018 **PC Member**, CIKM Short Papers
- 2018 **PC Member**, SIGIR - LND4IR Workshop
- 2018 **PC Member**, WWW Full Papers
- 2017 **PC Member**, CIKM Short Papers
- 2016 **Guest Lecturer**, NYU ACM
- 2016 **Guest Lecturer**, CS446: Search Engines
- 2015 **Student Volunteer**, ICTIR 2015
- 2014-2015 **Treasurer**, NYU ACM

## Skills

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**Programming** Python, C/C++, Cuda, Java, Pytorch, Tensorflow, CNTK, Cosmos/Scope, SQL, MPI, OpenMP,

**Mathematics** Abstract Algebra, Analysis, Differential Equations, Probability/Statistics, Topography, Optimization, Machine Learning

## Publications

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- [1] Daniel Cohen, Qingyao Ai, and W. Bruce Croft. Adaptability of neural networks on varying granularity ir tasks. In *SIGIR Neu-IR Workshop*, Pisa, Italy, 2016.
- [2] Daniel Cohen and W. Bruce Croft. End to end long short term memory networks for non-factoid question answering. In *The International Conference on the Theory of Information Retrieval*, Newark, DE, USA, 2016.
- [3] Daniel Cohen and W. Bruce Croft. A hybrid embedding approach to noisy answer passage retrieval. In *The European Conference on Information Retrieval*, Grenoble, France, 2018.
- [4] Daniel Cohen, Bhaskar Mitra, Katja Hofmann, and W. Bruce Croft. Cross domain regularization for neural ranking models using adversarial learning. In *SIGIR*, 2018.
- [5] John Foley, Daniel Cohen, Hamed Zamani, James Allen, and W. Bruce Croft. Universal approximation functions for fast learning to rank. In *SIGIR*, 2018.
- [6] Daniel Cohen, Liu Yang, and W. Bruce Croft. Wikipassageqa: A benchmark collection for research on non-factoid answer passage retrieval. In *SIGIR*, 2018.
- [7] Daniel Cohen, Scott M. Jordan, and W. Bruce Croft. Distributed evaluations: Ending neural point metrics. In *SIGIR - LND4IR Workshop*, 2018.
- [8] Daniel Cohen, Brendan O'Connor, and W. Bruce Croft. Understanding the representational power of neural retrieval models using nlp tasks. In *ICTIR*, 2018.