

Stephen W. Mayhew

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mayhewsw.github.io

Research Interests Natural Language Processing, Named Entity Recognition, Low-resource Techniques, Transliteration, Multilingual Techniques, Information Extraction

Education Ph.D. Computer Science, 2017 -
Thesis: Low-resource Named Entity Recognition
Advisor: Dan Roth
University of Pennsylvania, Philadelphia, PA

Ph.D. Computer Science, Fall 2014 - 2017
Advisor: Dan Roth
University of Illinois at Urbana-Champaign, Urbana, IL

M.S. Computer Science, May 2014
Thesis: Trustworthiness and the Importance of Graph Structure
University of Illinois at Urbana-Champaign, Urbana, IL
GPA: 3.67/4.0

B.S. Computer Science with a Minor in Music, May 2012
Rose-Hulman Institute of Technology, Terre Haute, IN
GPA: 3.91/4.0, Summa Cum Laude

Selected Publications **On the Strength of Character Language Models for Multilingual Named Entity Recognition**
Xiaodong Yu, Stephen Mayhew, Mark Sammons, Dan Roth
EMNLP, 2018

Talen: Tool for Annotation Low-resource ENTities
Stephen Mayhew, Dan Roth
ACL Demonstrations, 2018, github.com/CogComp/talen

Cheap Translation for Cross-Lingual Named Entity Recognition
Stephen Mayhew, Chen-Tse Tsai, Dan Roth
EMNLP, 2017

Transliteration in Any Language with Surrogate Languages
Stephen Mayhew, Christos Christodoulopoulos, Dan Roth
arxiv 2016, <https://arxiv.org/abs/1609.04325>

Cross-Lingual Named Entity Recognition via Wikification
Chen-Tse Tsai, Stephen Mayhew, Dan Roth
CoNLL, 2016

Overview of UI-CCG systems for event argument extraction, entity discovery and linking, and slot filler validation
Mark Sammons, Yangqiu Song, Ruichen Wang, Gourab Kundu, Chen-Tse Tsai, Shyam Upadhyay, Siddharth Ancha, Stephen Mayhew, Dan Roth
Proceedings of the Seventh Text Analysis Conference (TAC2014), 2014.

Faster (and Better) Entity Linking with Cascades

*Adrian Benton, Jay Deyoung, Adam Teichert, Mark Dredze, Benjamin Van Durme
Stephen Mayhew, Max Thomas*

Automated Knowledge Base Construction (AKBC), 2014

Academic Honors

State Farm Companies Foundation Doctoral Scholar, 2015-2016

Siebel Scholar Award, 2013

Frank Young Senior Scholarship award, 2012

Dean's List, all quarters of undergrad degree

Member of Upsilon Pi Epsilon, Computer Science Honor Society

Experience

UPenn, LORELEI Summer Evaluation

Summer 2018

Summer Project - with many others

- Built an NER/EDL system for Sinhalese and Kinyarwanda with no gold annotated training data
- Helped coordinate a team to build infrastructure and annotate data

UPenn, LORELEI Summer Evaluation

Summer 2017

Summer Project - with Chase Duncan

- Built an NER/EDL system for Oromo and Tigrinya with no gold annotated training data

UIUC, LORELEI Summer Evaluation

Summer 2016

Summer Project - with Chen-Tse Tsai

- Built an NER system for Uyghur with no gold annotated training data
- Built an annotation interface for NER

Microsoft Research, Redmond, WA

Summer 2015

Research Intern

- Worked on *GALEN*, a decision support system for clinical genomics
- Designed and implemented the frontend, and wrote code to interface with the backend
- Worked with Hoifung Poon, Kristina Toutanova, Chris Quirk, Scott Yih

Johns Hopkins University, Baltimore, MD

Summer 2013

SCALE2013 Research workshop participant, Text Track

- Created *slinky*, the streaming entity-linker
- Used parallelism techniques to make *slinky* very fast

University of Illinois, Urbana-Champaign, IL

2012 – Present

Research Assistant for Dan Roth

- Work on trustworthiness techniques, especially as they apply to information extraction
- Testing and refactoring of group software

MIT Lincoln Labs, Boston, MA

Summer 2012

Human Language Technologies Intern, Group 62

	<ul style="list-style-type: none"> • Surveyed several graph visualization tools • Developed plugins for a specific visualization task 	
	Interactive Intelligence Indianapolis, IN <i>Development Intern, Speech Analytics team</i> <ul style="list-style-type: none"> • Developed a prototype Text-To-Speech engine using Festival • Researched multiple ways to improve voice quality • Advised team members on duplicating engine prototype • Wrote extensive documentation for voice-building process 	Summer 2011
	Alcoa Howmet , Whitehall, MI <i>IT Intern</i> <ul style="list-style-type: none"> • Conducted department-wide interviews regarding workflow • Designed and deployed a license tracker utility • Developed several VBA solutions for Office applications • Developed programs to read Word files, and write to Excel files 	Summer 2010
Teaching Experience	University of Pennsylvania , Philadelphia, PA CIS530, Natural Language Processing, Teaching Assistant for Chris Callison-Burch	Spring 2018
	University of Illinois , Urbana, IL CS446, Machine Learning, Teaching Assistant for Julia Hockenmaier	Spring 2015
	Rose-Hulman , Terre Haute, IN <i>Teaching assistant, grader</i> <ul style="list-style-type: none"> • Grader for CS freshman year courses, Databases, Requirements and Specifications, Design and Analysis of Algorithms 	2009 – 2012
Service	External reviewer for TKDE 2014, EMNLP2018, FEVER2018, NAACL2019 (outstanding reviewer), EMNLP-IJCNLP 2019	
	Graduate Student Ambassador for prospective students University of Illinois	2014-2016
	Graduate Student Member on the CS Fellowships, Admissions, and Assistantship Committee	Spring 2015
Other Experience	English teacher in Daejeon, Korea	Summer 2009
	Violinist Terre Haute Symphony Orchestra (semi-pro)	2005 – 2012
Skills	Python, Java, HTML, CSS, JavaScript, C#, Haskell Pytorch, AllenNLP Data visualization - d3.js, Gephi, JUNG, matplotlib Working knowledge of German, Spanish	
Citizenship	Dual citizenship US/UK.	