

Stephen W. Mayhew

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mayhewsw.github.io

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

Education Ph.D. Computer Science, 2017 -
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 **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

Visualization of Trustworthiness
Stephen Mayhew, Dan Roth
WWW Workshop: Rumors and Deception in Social Media (RDSM), 2015

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

IllinoisCloudNLP: Text Analytics Services in the Cloud
*Hao Wu, Zhiye Fei, Aaron Dai, **Stephen Mayhew**, Mark Sammons, Dan Roth*
Language Resources and Evaluation Conference (LREC), 2014

RECOG: Recognition and Exploration of Content Graphs
*Kara Greenfield, **Stephen Mayhew**, William Campbell*
Pacific Visualization, 2013

Presentations: **Robust Information Extraction from Multiple Sources**
CCICADA Research Retreat 2013, Houston, TX

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

	<ul style="list-style-type: none"> • Used parallelism techniques to make <i>slinky</i> very fast 	
	University of Illinois , Urbana-Champaign, IL <i>Research Assistant for Dan Roth</i>	2012 – Present
	<ul style="list-style-type: none"> • Work on trustworthiness techniques, especially as they apply to information extraction • Testing and refactoring of group software 	
	MIT Lincoln Labs , Boston, MA <i>Human Language Technologies Intern, Group 62</i>	Summer 2012
	<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>	Summer 2011
	<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 	
	Alcoa Howmet , Whitehall, MI <i>IT Intern</i>	Summer 2010
	<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 	
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	
	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, Scala, HTML, CSS, JavaScript, C#, C, MySQL, PHP, Scheme, Objective-C, elisp, Haskell. Data visualization - d3.js, Gephi, JUNG, matplotlib, Cytoscape Working knowledge of Spanish, preliminary knowledge in Korean, Latin, Greek, Hebrew
Citizenship	Dual citizenship US/UK.