Elliot P. Schumacher

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EDUCATION

Johns Hopkins University *August 2017 - Present*
Ph.D. in Computer Science
Center for Language and Speech Processing
Advisor: Dr. Mark Dredze
Research area: Natural Language Processing and Information Extraction.

Carnegie Mellon University *August 2015-August 2017*
Master of Science in Language Technologies
Language Technologies Institute
Advisor: Dr. Maxine Eskenazi
Research area: Natural Language Processing for Educational domain.
Selected Courses: Machine Learning, Algorithms for NLP, Machine Translation, Language and Statistics, Deep Learning, Computational Semantics (all PhD. level courses)
GPA: 3.73/4.00

Ohio State University *May 2014*
Bachelors of Science in Computer & Information Science, and Linguistics
with Honors, Cum Laude
Selected Courses: Computational Linguistics, Speech and Language Processing, Advanced Artificial Intelligence, Computer Vision, Machine Learning
Overall GPA: 3.64/4.00, **Major GPA**: 3.72/4.00

PUBLICATIONS

EMNLP 2016 November 2016

· **E. Schumacher**, M. Eskenazi, G. Frishkoff, K. Collins-Thompson. Predicting the Relative Difficulty of Single Sentences With and Without Surrounding Context. Proceedings of the 2016 Conference on Empirical Methods in Natural Language Processing (EMNLP 2016). *(Link)*.

AKBC 2019 May 2019

· **E. Schumacher**, M. Dredze. Discriminative Candidate Generation for Medical Concept Linking. Proceedings of the 2019 AKBC Conference. *(Link)*.

NeurIPS Workshop on Machine Learning for Health (ML4H) Dec 2019

· A. Mulyar, **E. Schumacher**, M. Rouhizadeh, M. Dredze. Phenotyping of Clinical Notes with Improved Document Classification Models Using Contextualized Neural Language Models. *(Link)*.

JAMIA Open 2019

· **E. Schumacher**, M. Dredze. Learning Unsupervised Contextual Representations for Medical Synonym Discovery . *(Link)*.

TEACHING EXPERIENCE

Johns Hopkins University Fall 2018
Teaching Assistant for Machine Learning *Baltimore, MD*

· Responsibilities include holding office hours, writing homework assignments, and teaching recitation.
· Gave guest lectures on Decision Trees and Linear Regression.

TECHNICAL REPORTS AND PRESS COVERAGE

A Readability Analysis of Campaign Speeches from the 2016 US Presidential Campaign
March 2016

E. Schumacher, M. Eskenazi. *(Arxiv Link).*

· **CMU Press Release**: *Most Presidential Candidates Speak at Grade 6 - 8 Level*

· **Selected Press Coverage**

Huffington Post: *Trumps Speeches Are At A Middle-School Reading Level, Study Says.*

Washington Post: *Trumps grammar in speeches just below 6th grade level, study finds.*

Pittsburgh Tribune-Review: *Speeches dip below 6th-grade level, study says.*

RESEARCH EXPERIENCE

Johns Hopkins University September 2017 - Present
Research Assistant *Baltimore, MD*

· Focusing on natural language processing as applied to medical documents (such as clinical notes).
· Currently working on improvements to concept linking systems for clinical notes using neural representations and unsupervised approaches.

Carnegie Mellon University September 2015 - August 2017
Research Assistant *Pittsburgh, PA*

· Worked on the DSCoVAR project, a Department of Education grant to build a Vocabulary Tutoring System.
· Developed a method of ranking the reading difficulty of a sentence for first language learners, by running a crowdsourcing task and modeling the data to find important features (see EMNLP 2016 paper).
· Built a pipeline that finds sentences with selected vocabulary words, and annotates them for difficulty and other information.

WORK EXPERIENCE

State Teachers Retirement System of Ohio January 2013 - August 2015
Student Developer, promoted to Developer *Columbus, Ohio*

· Developed internal applications in Java and C#.
· Designed and implemented a web application for internal forms.

Ohio State University Wexner Medical Center May 2011 - January 2013
Student Intern *Columbus, Ohio*

· Provided technical support within Ohio State's Hospital system.

Ohio State University College of Medicine Sept 2009 - August 2011
Mobile Services Student *Columbus, Ohio*

· Provided technical support for students in the College of Medicine

AWARDS AND ACHIEVEMENTS

Graduate Research Fellowship Recipient

· Selected for a research fellowship, which provides full funding for tuition, stipend, and other fees.
· Scholarship value: USD 75,000 per year, renewable for duration of degree.

Maximus Scholarship Recipient Recipient

· Received a yearly scholarship, which partially covered tuition for 4 years.

TECHNICAL STRENGTHS

Computer Languages	Python, Java, C#. Some experience in C, MATLAB
Toolkits	tensorflow, sklearn, nltk
Databases	MySQL, Oracle, Microsoft SQL