Rachel Rudinger

CONTACT INFORMATION

Department of Computer Science
Center for Language and Speech Processing
Johns Hopkins University
Hackerman 321

address: 3925 Beech Ave. Baltimore, MD
email: rudinger@jhu.edu
web: rudinger.github.io

EDUCATION

Johns Hopkins University — Fall 2013 – present
Ph.D. in Computer Science — *Baltimore, MD*
Affiliation: Center for Language and Speech Processing
Advisor: Benjamin Van Durme

Johns Hopkins University — Fall 2013 – Spring 2016
M.S.E. in Computer Science — *Baltimore, MD*

Yale University — Fall 2008 – Spring 2013
B.S. in Computer Science — *New Haven, CT*
Thesis Advisors: Dana Angluin, Robert Frank

INTERNATIONAL

Saarland University — February – June 2014
Department of Computational Linguistics and Phonetics (COLI) — *Saarbrücken, Germany*
Visiting Ph.D. student
NSF Partnerships for International Research and Education (PIRE)
Advisors: Vera Demberg, Manfred Pinkal

Tsinghua University — Fall 2010 – Spring 2011
Inter-University Program — *Beijing, China*
Chinese Language Immersion

FELLOWSHIPS

Graduate Research Fellowship Program (GRFP) — Awarded 2013
National Science Foundation

Robert B. Pond, Sr. Doctoral Student Fellowship — Awarded 2013
Johns Hopkins Whiting School of Engineering

Richard U. Light Fellowship for Language Study in East Asia — Awarded 2009, 2010
Yale University

RESEARCH EXPERIENCE

Doctoral Research — Fall 2013-present
Johns Hopkins University, Department of Computer Science — *Baltimore, MD*
Advisor: Benjamin Van Durme

Allen Institute for Artificial Intelligence (AI2) — Summer 2015
Research Intern — *Seattle, WA*
Host: Peter Clark
As an intern on Project Aristo (an AI challenge to solve elementary level multiple-choice science test questions), I built a large-scale resource of common-sense inference rules of the type *drop* X → X *fall* derived from aggregate corpus statistics on coreference chains extracted from text, and integrated these rules into Aristo's textual entailment engine.

First Jelinek Memorial Workshop — Summer 2014

Site: Charles University *Prague, Czech Republic*
Team: Probabilistic Representations of Linguistic Meaning (PRELIM)
Senior Members: Benjamin Van Durme, Kyle Rawlins, Jason Eisner
The PRELIM team jump-started the decompositional semantics effort at JHU (decomp.net), an alternative computational approach to semantic role labeling in NLP based on the semantic "proto-role" theory of Dowty (1991). I was a core contributor to the linguistically-motivated collection protocol of the "Semantic Proto-Role (SPRL)" dataset, which is still in active use.

Center for Language and Speech Processing Summer Workshop Summer 2012
Site: Johns Hopkins University *Baltimore, MD*
Team: Domain Adaptation for Machine Translation (DAMT)
Senior Members: Hal Daumé III, Marine Carpuat, Chris Quirk, Alexander Fraser
I worked on designing and training a classifier for detecting when a word in a transfer domain (e.g., medical texts) acquires a new translation sense from the original domain (e.g., news); I developed useful features for this task based on distributional semantics.

Yale Science Scholars Program Summer 2011
Advisor: Dana Angluin, Department of Computer Science *New Haven, CT*
Project: Modeling language acquisition in a teacher-learner paradigm with grounded semantics, using finite-state transduction between logical and surface forms. In this framework, I devised and implemented a successful algorithm for the acquistion of multi-word expressions.

NSF Research Experience for Undergraduates (REU) Summer 2010
Binghamton University, Department of Computer Science *Binghamton, NY*
Advisor: Lijun Yin
Project: Adapting the active appearance models algorithm for 3D facial expression recognition.

Teaching & Mentorship

Direct Supervisor, Undergraduate Research Assistant January 2017 – present
Project: Crowdsourced human verification of automatic text analysis tool.

Women in Science and Engineering (WISE) Program School Yr. 2014-15, 2015-16
I mentored college-bound women from a Baltimore-area high school in Computer Science, Programming, and Natural Language Processing, developing my own curriculum. Emphasis on Python programming and research in NLP with nltk. Both students completed their own NLP projects: one on language generation from context-free grammars, one on chat-bot design. 6hrs/wk.

Johns Hopkins Center for Talented Youth (CTY) Summer 2013
Full-time Teaching Assistant for Mathematical Logic, a college level summer course for academically gifted 12-16 year olds. Designed and taught various lesson plans; provided one-on-one assistance.

Publications

Rachel Rudinger, Chandler May, and Benjamin Van Durme. 2017. Social bias in elicited natural language inferences. In *Proceedings of the First Workshop on Ethics in Natural Language Processing*. Association for Computational Linguistics, page 7479. http://www.ethicsinnlp.org/workshop/pdf/EthNLP09.pdf

Sheng Zhang, Rachel Rudinger, Kevin Duh, and Benjamin Van Durme. 2017. Ordinal common-sense inference. *Transactions of the Association of Computational Linguistics* 5:[To Appear]. https://arxiv.org/abs/1611.00601

Aaron Steven White, Drew Reisinger, Keisuke Sakaguchi, Tim Vieira, Sheng Zhang, Rachel Rudinger, Kyle Rawlins, and Benjamin Van Durme. 2016. Universal decompositional semantics on universal dependencies. In *Proceedings of the 2016 Conference on Empirical Methods in Natural Language Processing*. Association for Computational Linguistics, pages 1713–1723.

http://aclweb.org/anthology/D16-1177

Aaron Steven White, Drew Reisinger, Rachel Rudinger, Kyle Rawlins, and Benjamin Van Durme. 2016. Computational linking theory. *CoRR* abs/1610.02544. http://arxiv.org/abs/1610.02544

Rachel Rudinger, Pushpendre Rastogi, Francis Ferraro, and Benjamin Van Durme. 2015. Script induction as language modeling. In *Proceedings of the 2015 Conference on Empirical Methods in Natural Language Processing*. Association for Computational Linguistics, pages 1681–1686. https://doi.org/10.18653/v1/D15-1195

Drew Reisinger, Rachel Rudinger, Francis Ferraro, Craig Harman, Kyle Rawlins, and Benjamin Van Durme. 2015. Semantic proto-roles. *Transactions of the Association of Computational Linguistics* 3:475–488. http://aclweb.org/anthology/Q15-1034

Rachel Rudinger, Vera Demberg, Ashutosh Modi, Benjamin Van Durme, and Manfred Pinkal. 2015. Learning to predict script events from domain-specific text. In *Proceedings of the Fourth Joint Conference on Lexical and Computational Semantics*. Association for Computational Linguistics, pages 205–210. https://doi.org/10.18653/v1/S15-1024

Rachel Rudinger and Benjamin Van Durme. 2014. *Proceedings of the Second Workshop on EVENTS: Definition, Detection, Coreference, and Representation*, Association for Computational Linguistics, chapter Is the Stanford Dependency Representation Semantic?, pages 54–58. https://doi.org/10.3115/v1/W14-2908

Marine Carpuat, Hal Daume III, Katharine Henry, Ann Irvine, Jagadeesh Jagarlamudi, and Rachel Rudinger. 2013. Sensespotting: Never let your parallel data tie you to an old domain. In *Proceedings of the 51st Annual Meeting of the Association for Computational Linguistics (Volume 1: Long Papers)*. Association for Computational Linguistics, pages 1435–1445. http://aclweb.org/anthology/P13-1141

Talks

Script Induction as Language Modeling — November 2015
Center for Language and Speech Processing Seminar

Learning Scripts from Thematically Related Texts — July 2014
Forum Entwicklung und Anwendung von Sprach-Technologien (FEAST)
Saarland University, Department of Computational Linguistics and Phonetics

Is the Stanford Dependency Representation Semantic? — January 2015
Mid-Atlantic Student Colloquium on Speech, Language and Learning (MASC-SLL)

Software & Datasets

Nachos, a tool for learning narrative chains.
https://github.com/rudinger/nachos

*PredPatt**, a tool for predicate-argument analysis of text.
https://github.com/hltcoe/PredPatt

*Semantic Proto-Roles Dataset** (SPRL), decompositional semantic annotations over PropBank.
http://decomp.net/semantic-proto-roles

*contributor

Other Service

Ph.D. Recruitment Committee, JHU Center for Language and Speech Processing

Reviewing for Journals, Conferences, and Workshops
EVENTS Workshop (ACL), STAR-SEM, TACL*, EMNLP*, ACL*, EACL* (*secondary reviewer)

North American Computational Linguistics Olympiad (NACLO)
Organizing Committee (2014-2015) for the Johns Hopkins regional test site.

JHU Dept. of Computer Science, graduate contact person for NLP

Organizations

Graduate Association of Women in CS & EE (GRACE), JHU 2016-present
Women of Whiting (WoW), Whiting School of Engineering, JHU 2015, 2017-present
Women Active in Computer Science at Yale (WACSY), treasurer 2011-2013
STEM Sibs, Yale University 2012-2013

Skills

Computer
Lanaguages: Python, Java, Scala, C, R, Scheme/LISP, Matlab
Deep Learning: Tensorflow, PyTorch
Misc: bash, LaTeX, git

Languages
Mandarin Chinese (proficient/fluent), HSK level 8
German (intermediate)
Spanish (beginner-intermediate)

Graduate Courses
Natural Language Processing, Machine Learning & Graphical Models, Matrix Analysis, Representation Learning, Semantics, Event Semantics, Big Data & Scalable Systems, Advanced Data-Intensive Computing