

IRINA RABKINA

irabkina.github.io

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EDUCATION

- 2020 (Expected) Northwestern University, Evanston, IL
Ph.D. in Computer Science, Certificate in Cognitive Science
Thesis: *Analogical Theory of Mind: Computational Model and Applications*
- 2015 Loyola University of Chicago, Chicago, IL
M.S. in Computer Science
Coursework only
- 2014 Scripps College, Claremont, CA
B.A. Honors in Neuroscience, Computer Science Minor
Thesis: *Examining the Cognitive Advantages and Disadvantages of the Bilingual Brain*

PUBLICATIONS

Journal Articles

- (2020) **Rabkina, I.** and Forbus, K. D. An Analogical Model of Pretense. Under review.
- 2019 Nakos, C., **Rabkina, I.**, & Forbus, K. D. (2019). An Analogical Account of Reference Resolution. *Advances in Cognitive Systems*. To appear.
- 2017 Forbus, K. D., Liang, C., & **Rabkina, I.** (2017). Representation and Computation in Cognitive Models. *Topics in Cognitive Science*, 9(3), 694-718.

Conference Proceedings

- 2019 Chen, K., **Rabkina, I.**, McLure M. D., & Forbus, K. D. (2019) Human-like Sketch Object Recognition via Analogical Learning. *Proceedings AAAI 2019*, Honolulu, HI.
- 2019 **Rabkina, I.**, Nakos, C., & Forbus, K. D. (2019) Children's Sentential Complement Use Leads the Theory of Mind Development Period: Evidence from the CHILDES Corpus. *Proceedings of the 41st Meeting of the Cognitive Science Society*, Montreal, Canada.
- 2019 **Rabkina, I.** & Forbus, K.D. Analogical Reasoning for Intent Recognition and Action Prediction in Multi-Agent Systems. *Proceedings of the 7th Annual Conference on Advances in Cognitive Systems*. Cambridge, MA.
- 2019 Wilson, J. R., Chen, K., Crouse, M., Nakos, C., Neves Ribeiro, D., **Rabkina, I.**, & Forbus, K. D. Analogical Question Answering in a Multimodal Information Kiosk. *Proceedings of the 7th Annual Conference on Advances in Cognitive Systems*. Cambridge, MA.

- 2018 **Rabkina, I.**, McFate, C., & Forbus, K. D. (2018) Bootstrapping from Language in the Analogical Theory of Mind Model. *Proceedings of the 40th Annual Meeting of the Cognitive Science Society*, Madison, WI.
- 2018 Forbus, K. D., Hinrichs, T., & **Rabkina, I.** (2018). Building Analogy Systems: Some Lessons Learned. *Proceedings of the 6th Annual Conference on Advances in Cognitive Systems*. Stanford, CA.
- 2017 **Rabkina, I.**, McFate, C., Forbus, K. D., & Hoyos, C. (2017) Towards a Computational Analogical Theory of Mind. *Proceedings of the 39th Annual Meeting of the Cognitive Science Society*, London, England.

Workshops & Other Presentations

- 2017 Blass, J., **Rabkina, I.**, and Forbus, K. D. (2017) Towards a Domain-independent Method for Evaluating and Scoring Analogical Inferences. *Computational Analogy Workshop, International Conference on Case Based Reasoning*. Trondheim, Norway.
- 2016 **Rabkina, I.** and Forbus, K.D. (2016) An Analogical Model of Pretense. Poster presented at the *38th Annual Meeting of the Cognitive Science Society*. Philadelphia, PA.
- 2016 **Rabkina, I.** and Justus, T. (2016) Bilingual English-Spanish Speakers Demonstrate Language-switching Costs, but no Bilingual Advantage, in a Modified Stroop Task. Poster presented at the *Association for Psychological Science*. Chicago, IL.
- 2015 **Rabkina, I.**, Lima Nogueira, L, and Albert, M. V. (2015) Real-time Activity Recognition Using Mobile Sensors: An Online Graphical Front-end. Poster presented at the *45th Annual Meeting of the Society for Neuroscience*. Chicago, IL.
- 2014 **Rabkina, I.** The Intersection of the Bilingual Advantage and Disadvantage. (2014) *Scripps College Capstone Presentations*. Claremont, CA.
- 2013 **Rabkina, I.** Computational Modeling of Bilingual Language Acquisition and Interference in Bilingual Choice. (2013) Poster presented at the *Fall Neuroscience Thesis Symposium of the W.M. Keck Science Department*. Claremont, CA.
- 2013 **Rabkina, I.** and Barazza, J. The Role of Sensitivity to Positive/Negative Valence in Polyvagal Theory. (2013) Poster presented at the *The Faculty for Undergraduate Neuroscience Poster Session*. San Diego, CA.
- 2013 **Rabkina, I.** Narrative Values and Moral Action: Investigating Links by Combining Quantitative Semantic Analysis and Behavioral Economics. (2013) *Mellon Fellowship Undergraduate Research Presentations*. Claremont, CA.

AWARDS

2019	Terminal Year Fellowship, Northwestern University
2019	The Graduate School Conference Travel Grant, Northwestern University

2019	Cognitive Science Travel Grant, Northwestern University
2018	Summer Research (NREIP) Fellowship, Naval Research Laboratory
2018	Glushko Travel Award, Cognitive Science Society
2018	Graduate Cohort for Women Participant, Computing Research Association
2015	Cabell Fellowship, Northwestern University
2013	Claremont Neuroscience Research Fellowship, Scripps College
2013	Mellon Research Fellowship, Scripps College
2010	James E. Scripps Scholarship, Scripps College

TEACHING EXPERIENCE

Northwestern University

Instructor: Knowledge Representation & Reasoning (scheduled for Winter 2020)

Course Consultant: Conversational Interfaces (Spring 2019)

Co-Instructor: Knowledge Representation & Reasoning (Winter 2019)

Workshop Instructor: Computing Everywhere (Winter, Spring 2018; Winter, Spring 2019)

Teaching Assistant: Introduction to Cognitive Modeling (Fall 2016; Fall 2017)

Pomona College

Peer Mentor: Computation & Cognition (Spring 2014)

Peer Mentor: Foundations of Computer Science (Fall 2013)

Scripps College

Tutor: Computer Science (Fall 2013; Spring 2014)

RESEARCH EXPERIENCE

2015-present **Research Assistant, Qualitative Reasoning Group, Northwestern University**

My work focuses on the social reasoning capabilities of the Companion Cognitive Architecture. Specifically, I have developed a cognitive model of theory of mind reasoning via analogy and am applying it to improve virtual agents' interaction and collaboration in multi-agent (virtual and human-virtual mixed) environments.

2018 **NREIP Intern, Navy Center for Applied Research in Artificial Intelligence**

Collaborated with researchers from the Naval Research Laboratory to build an experimental middleware to connect the Microsoft Malmo Minecraft environment with a variety of planning and reasoning systems.

2014-2015 **Research Assistant, Pervasive and Ambient Computing Lab, Loyola University of Chicago**

- 2013-2014 **Senior Thesis Student, Music and Language Cognition Lab, Pitzer College**
- 2013 **Summer Research Assistant, Cognitive & Systems Neuroscience Laboratory, Stanford University**
- 2012-2014 **Undergraduate Research Assistant, Center for Neuroeconomics Studies, Claremont Graduate University**
- 2011-2013 **Research Assistant, Spezio Lab, Scripps College**
- 2009, 2011 **Summer Student, Swanson Lab, University of California, San Francisco**

SERVICE TO PROFESSION

Reviewing

Cognitive Science Society, International Conference on Case Based Reasoning (ICCBR-2018)

Organizing

Special Track on Computational Analogy @ ICCBR-2018

SERVICE TO DEPARTMENT

Computer Science Department, Northwestern University

Graduate Women in Computing, Founder & Co-President (2019-present)
Artificial Intelligence Journal Club, Leadership Board Member (2017-present)
Computer Science PhD Advisory Council, Founding Member (2017-2018)

Keck Science Department, Claremont, CA

Socializing with Scientists, Leadership Board Member (2013-2014)

PROFESSIONAL EXPERIENCE

- 2014-2015 Software Engineer, HERE Maps, Chicago, IL
Built and maintained front-end interface to large-scale
noSQL database. Trained and supported non-technical
internal customers on interface and database use.

OUTREACH

- 2015-present ShelsCode, Evanston, IL
Advisory Board Member & Volunteer Instructor