Grusha Prasad

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EMPLOYMENT

Assistant Professor of Computer Science, Colgate University 2022-Present
Research Intern, Facebook AI Research Fall 2020

EDUCATION

Johns Hopkins University, Ph.D. Cognitive Science 2017-2022
Advisor: Tal Linzen

Hampshire College, B.A. Cognitive Science 2013-2017
Advisor: Joanna Morris

Other certificates:
Johns Hopkins University, Teaching Academy Certificate 2021
Johns Hopkins University, Teaching Institute 2020
Five College Certificate for Cognitive Neuroscience 2017

PEER-REVIEWED JOURNAL PAPERS

Grusha Prasad & Tal Linzen. Rapid syntactic adaptation in self-paced reading: detectable, but only with many participants (2021). *Journal of Experimental Psychology: Learning, Memory and Cognition.*

PEER-REVIEWED PROCEEDINGS PAPERS

Aryaman Chobey, Oliver Smith, Anzi Wang & **Grusha Prasad**. Can training neural language models on a curriculum with developmentally plausible data improve alignment with human reading behavior? *Proceedings of the 27th Conference on Computational Natural Language Learning (CoNLL): BabyLM shared task.*

Shauli Ravfogel*, **Grusha Prasad***, Tal Linzen & Yoav Goldberg (2021). Counterfactual Interventions Reveal the Causal Effect of Relative Clause Representations on Agreement Prediction *Proceedings of the 25th Conference on Computational Natural Language Learning (CoNLL).* [arxiv]. *equal contribution.

Grusha Prasad, Yixin Nie, Mohit Bansal, Robin Jia, Douwe Kiela & Adina Williams (2021). To what extent do human explanations of model behavior align with actual model behavior? *Proceedings of the 4th Workshop on the Analysis and Interpretation of Neural Networks for Natural Language Processing (BlackBox NLP)* [arxiv].

Douwe Kiela, Max Bartolo, Yixin Nie, Divyansh Kaushik, Atticus Geiger, Zhengxuan Wu, Bertie Vidgen, **Grusha Prasad**, Amanpreet Singh, Pratik Ringshia, Zhiyi Ma, Tristan Thrush, Sebastian Riedel, Zeerak Waseem, Pontus Stenetorp, Robin Jia, Mohit Bansal, Christopher Potts, Adina Williams. Dynabench: Rethinking Benchmarking in NLP. *Proceedings of the 2021 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies* [paper]

Grusha Prasad, Marten van Schijndel & Tal Linzen (2019). Using priming to uncover the organization of syntactic representations in neural language models. *Proceedings of the 23rd Conference on Computational Natural Language Learning (CoNLL).* [paper] **Honorable mention for Best Paper Award for Research Inspired by Human Language Learning and Processing**

PEER-REVIEWED CONFERENCE PRESENTATIONS

2023:
Grusha Prasad, & Tal Linzen. Studying relative clause representations: a novel parsing model and priming paradigm. **Oral Presentation.** *36th Annual Annual Conference on Human Sentence Processing.* [slides]

2022:
Kuan-Jung Huang, Suhas Arehalli, Mari Kugemoto, Christian Muxica, **Grusha Prasad**, Brian Dillon and Tal Linzen. SPR mega-benchmark shows surprisal tracks construction- but not item-level difficulty. **Oral Presentation.** *The 35th Annual Conference on Human Sentence Processing*, Virtual Conference. [slides]

2020:
Grusha Prasad, & Tal Linzen. Rapid syntactic adaptation in SPR: detectable, but requires many participants. **Oral Presentation.** *33nd Annual CUNY Conference on Human Sentence Processing*, Virtual Conference, March 19. [slides]

2019:
Grusha Prasad and Tal Linzen. How much harder are hard garden-path sentences than easy ones? **Poster Presentation.** *41st Annual Conference of the Cognitive Science Society, Montreal, July 24-27* [poster] [OSF]

Grusha Prasad, Marten van Schijndel & Tal Linzen. Using syntactic priming to investigate how recurrent neural networks represent syntax **Poster Presentation.** *32nd Annual CUNY Conference on Human Sentence Processing*, Boulder, Colorado, March 15. [poster]

Grusha Prasad, & Tal Linzen. Reassessing the evidence for syntactic adaptation from self-paced reading studies. **Poster Presentation.** *32nd Annual CUNY Conference on Human Sentence Processing*, Boulder, Colorado, March 15. [poster]

2018:
Grusha Prasad, Joanna Morris & Mark Feinstein. The P600 for singular 'they': How the brain

reacts when John decides to treat themselves to sushi. **Poster Presentation**, *31st Annual CUNY Conference on Human Sentence Processing*, Davis, California, March 15. [poster]

2017:
Grusha Prasad, Joanna Morris & Mark Feinstein. The P600 for singular 'they': How the brain reacts when John decides to treat themselves to sushi. **Oral Presentation**, *58th Annual Meeting of the Psychonomic Society*, Vancouver, British Columbia, November 9-12. [slides]

INVITED TALKS

Using computational models to evaluate competing (psycho)linguistic theories.
C.PsyD lab, Cornell University. October 20 2023.

Generating and testing *quantitative* predictions about language processing
Keynote talk: *Summer School on Statistical Methods for Linguistics and Psychology, University of Potsdam, Germany*. September 12 2023.

Using a syntactic-theory first approach to study structural representations: a novel parsing model and priming paradigm.
s/lab, University of California Santa Cruz (Virtual Talk). May 18 2023.

Generating and testing *quantitative* predictions about language processing
Natural Science Colloquium, Colgate University, New York. April 28 2023.

What incremental structures do comprehenders construct when processing sentences?
Sentence Processing Colloquium, University of Potsdam, Germany (Virtual talk). June 16 2022.

The P600 for singular 'they': How the brain reacts when John decides to treat themselves to sushi.
University of Massachusetts, Amherst (Virtual Talk). October 15 2021.

How do neural networks encode and use syntactic information?
Complang, Massachusetts Institute of Technology (Virtual talk). April 7 2021.

Using priming to understand how humans and neural networks represent sentences
Cognitive and Behavioural Neuroscience Colloquium, George Mason University (Virtual talk). February 17 2021.

Fantastic garden path effects and how to find and model them
University of Potsdam, Germany (Virtual talk). March 13 2020.

TEACHING

Classes at Colgate University:

Data Structures and Algorithms	2023
Natural Language Processing	2023
Introduction to Computing I, D	2023
Introduction to Computing I B,C	2022

Classes at Johns Hopkins University:

Instructor: Playing with Data: an Experimenter's Guide to Hypotheses Evidence and the Truth	2021
Teaching Assistant: Bayesian Inference	2020
Teaching Assistant: Introduction to computational cognitive science	2019
Teaching Assistant: Cognitive Neuropsychology of Visual Perception	2019
Teaching Assistant: Cognitive Development	2018
Teaching Assistant: Mind, Brain and Experience.	2018

Classes at Hampshire College:

Co-instructor: What does a theory of meaning look like?	2016
Teaching Assistant: Electrophysiology Methods and Data Analysis	2016
Teaching Assistant: Words, Faces and Other Minds	2015
Teaching Assistant: Brain and Cognition II: Electrophysiological methodologies	2015

Guest lectures:

Language Acquisition (*Polly High School class: AP Psychology*)	2020
Syntactic Priming (*JHU Class: Computational Psycholinguistics*)	2020
Syntactic Priming (*JHU Class: Computational Psycholinguistics*)	2019
Language Acquisition (*JHU Class: Cognitive Development*)	2019

Other:

Workshops on Cognitive neuroscience and Experimental Design 2015
Co-designed and ran multiple session workshop for 8th graders at Hilltown Charter School (East Hampton, MA) and Oakridge International School (Bengaluru, India)

MENTORING

Undergraduate research students from Colgate University
Anzi Wang, Aryaman Chobey, Edna Gutierrez, Nancy Lei, Paige Mizutani, Oliver Smith, Omar Fargally

Undergraduate students from Johns Hopkins University
Hunter Paulison, Daniela Torres, Meg Obata, Claire Joyce, Brody Silva, Nicholas Douglass

Women in Science and Engineering (WISE) Program 2018
Co-mentored a high school student on an eye-tracking project

NON PEER-REVIEWED MANUSCRIPTS

Grusha Prasad (Phd Dissertation). Towards Characterizing Incremental Structure Building During Sentence Comprehension. [JHU Library Copy]

Grusha Prasad & Joanna Morris. The P600 for singular 'they': How the brain reacts when John decides to treat themselves to sushi. [PsyArXiv] [OSF]

AWARDS AND HONORS

Outstanding Area Chair at ACL 2023
Awarded to 1-1.5% of the pool of reviewers and chairs.

Gibson/Fedorenko Young Scholars Prize 2023
This prize honors young scholars who present outstanding scientific work as a talk at the annual Conference on Human Sentence Processing

Colgate University Faculty Initiated Summer Research Award 2023
Summer research funding for three students.

APA Dissertation Research Award 2021
Awards are made annually by the APA Science Directorate to promising graduate students to assist with the costs of their dissertation research

Johns Hopkins University, Owen's Scholar Award 2017-2020
Fellowship for outstanding incoming PhD students in the natural sciences

Hampshire College, Ingenuity Award 2017
An award to recognize students who work in creative and effective ways to improve the Hampshire community

Hampshire College, Ray and Lorna Coppinger Endowment Grants 2016
Research grant for projects in cognitive or biological sciences

Hampshire College, Cognitive Science 2016
Research grant for projects in cognitive science

Hampshire College program in Culture, Brain and Development 2016, 2015
Research grant for projects incorporating psychobiological and sociocultural perspectives

Hampshire College program in Culture, Brain and Development 2016, 2015
Summer placement grant for projects incorporating psychobiological and sociocultural perspectives

Hampshire College, Ethics and Common Good grant 2015
Grant to support student projects that address a common good issue/ community need

Hampshire College, Earl Ubell Science Information Award 2015
Grant to support student projects that seek to make the scientific method or scientific findings accessible to non-scientists

Hampshire College, Bell Ringer Merit Scholarship 2015
Most prestigious merit scholarship awarded to incoming students

SKILLS

Programming languages
Python, PyTorch, R, MATLAB, Java, Clojure

Natural languages
Proficient in English, Telugu, Kannada. Conversational Hindi. Basic French.

Stimulus presentation software
IbexFarm, PCIbex, PsychoPy, OpenSesame, E-prime

SERVICE

Grant Reviewing:

National Science Foundation	2023

Journal Reviewing:

Language Cognition and Neuroscience	2023
Quaterly Journal of Experimental Psychology	2022
Glossa Psycholinguistics	2022
Glossa Psycholinguistics	2021
Transactions of the Association for Computational Linguistics (co-reviewer)	2021
Cortex	2021
Language	2020
Cortex	2020
Language Cognition and Neuroscience (co-reviewer)	2019

Conference Program Committee:

Area chair: Association for Computational Linguistics	2023

Conference Reviewing:

Annual Conference on Human Sentence Processing	2023
Annual Conference of the Cognitive Science Society	2022
The North American Chapter of the Association for Computational Linguistics	2022
The SIGNLL Conference on Computational Natural Language Learning	2021
European Chapter of the Association for Computational Linguistics	2020

Colgate University:

Mind, Brain and Behavior Initiative committee member	2023
Co-organizer of the CS Department Tea	2022, 2023

Johns Hopkins University:

Departmental Representative for the Graduate Representative Organization	2017-2021

Hampshire College:

Student Representative to the School of Cognitive Science	2016-2017
Culture, Brain and Development Student Group Leader	2015-2017

PROFESSIONAL MEMBERSHIPS

Human Sentence Processing Society	2022,2023
American Psychological Association	2021
Association for Computational Linguistics	2019
Psychonomic Society	2017,2018