

Jonathan Rawski

Curriculum Vitae

Department of Linguistics & Language Development
San Jose State University San Jose, CA

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📄 jrawski.info

Employment & Affiliations

2021

Assistant Professor,

Dept. of Linguistics & Language Development,
San Jose State University.

2017

2021

Graduate Assistant,

Computational Linguistics Lab
Institute for Advanced Computational Science,
SBU TALENT Grant & NIH grant #R01HD87133-01.

Research Activities, Developed Interactive, Open Source Learning Platform for Mathematical Linguistics

2019

2021

Graduate Assistant,

Department of Neurobiology and Behavior, Stony Brook University.
Developing Center for Neural Circuit Dynamics, grant writing for \$4.5m NIH BRAIN Initiative Grant "Metastable dynamics in cortical circuits"

2015

2016

Graduate Assistant,

Theoretical Neuroscience Group, Higher School of Economics, Moscow,
Neurolinguistics Laboratory, Higher School of Economics, Moscow.

2013

Undergraduate Researcher,

Department of Speech-Language-Hearing Sciences, University of Minnesota.

2012

2013

Student Manager, Undergraduate Research Assistant,

NuMI Off-Axis Electron Neutrino Appearance (NOvA) Laboratory,
Department of Physics, University of Minnesota.

Research Areas

Linguistics
Computer Science

Computational/Mathematical Linguistics, Learnability, Phonology, Morphology
Algorithmic Learning Theory, Automata Theory, Formal Languages, Tensor Analysis, Machine learning

Education

2016

2021

PhD, Linguistics,

Stony Brook University,
Dissertation: Structure and Learning in Natural Language.
Advisor: Jeffrey Heinz

2014

2016

MSc, Cognitive Science, Higher School of Economics - Moscow,

Thesis: Homeostasis in Harmonic Grammar.
Advisors: Boris Gutkin (HSE/Ecole Normale) and Paul Smolensky (Johns Hopkins)

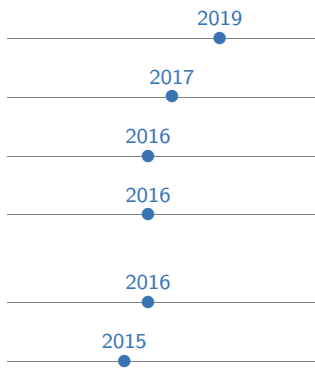
2010

2013

BA, Linguistics,

University of Minnesota - Twin Cities.

Non Degree-Confering



LSA Linguistic Institute.

Crete Summer School of Linguistics.

Visiting Graduate Student, Neural Theory Group, École Normale Supérieure.

New York-St. Petersburg Institute for Linguistics, Cognition, and Culture (NYI).

Winter Mathematics School, Higher School of Economics, Moscow.

New York-St. Petersburg Institute for Linguistics, Cognition, and Culture (NYI).

Courses Taught

Primary Instructor

San Jose State Introduction to Linguistics - F21, S22, F22
Speech Technology - F21, F22
Corpus Linguistics - S22
Natural Language Processing - S22

Stony Brook IACS Summer Youth Camp for Computational Linguistics - Summer 2020
Human Language - Sum17
Writing in Linguistics - W17, W18
Advanced English Academic Writing - S17

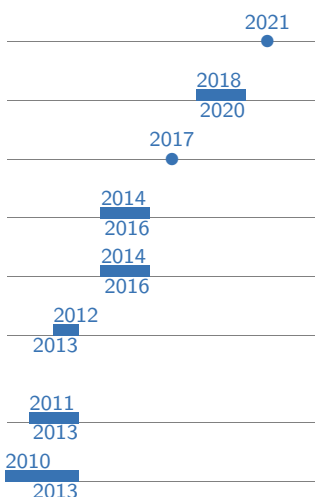
Teaching Assistant

Stony Brook Computational Linguistics - S21
Language and Technology - F18, F20
Language Acquisition - S18
Human Language - F16

LSA Institute Computational Phonology - Sum19
CreteLing Summer School Introduction to Phonology - Sum17

HSE Intro to Cognitive Science - 2015 – 2016

Grants and Awards



President's Award to Distinguished Doctoral Students, Stony Brook University.

IACS Junior Researcher Fellowship.

Crete Summer School of Linguistics Fellowship (tuition, lodging).

Higher School of Economics Graduate Fellowship (tuition, lodging, stipend).

Russian Federation Graduate Scholarship).

University of Minnesota UROP Grant (Co-PI with Peter Watson)),
"The Influence of Positive Correction on Phonological Learning".

North Central Electric League Scholarship.

Tyler Hill Memorial Scholarship.

Publications and Manuscripts

Note: author ordering is often alphabetical

Journal Articles

- in prep* Heinz, Jeffrey and **Rawski, Jonathan**. *Abductive Inference of Phonotactic Constraints*
- in prep* **Rawski, Jonathan**. *Computational Locality in Signed Phonology*
- in revision* Dolatian, Hossep, **Jonathan Rawski**, Jeffrey Heinz and Eric Raimy. *Regular and Polyregular theories of reduplication*
- in revision* Dolatian, Hossep and **Jonathan Rawski**. *Computational Locality in Nonlinear Morpho-phonology*
-
- 2021 **Rawski, Jonathan**, William Idsardi, and Jeffrey Heinz, *Comment on “Non-adjacent Dependency Processing in Monkeys, Apes, and Humans”*, Science Advances.
-
- 2021 Lambert, Dakotah, **Jonathan Rawski**, and Jeffrey Heinz., *Typology Emerges from Simplicity in Representations and Learning*, Journal of Language Modeling.
-
- 2021 Aronoff, Mark, **Jonathan Rawski**, and Wendy Sandler, *Talk Isn’t So Cheap*, Inference.
-
- 2020 De Santo, Aniello and **Jonathan Rawski**, *What Can Formal Language Theory Do for Animal Cognition Studies?*, Royal Society Open Science.
-
- 2019 **Rawski, Jonathan** and Jeffrey Heinz., *No Free Lunch in Linguistics or Machine Learning: Reply to Pater*, Language, 95(1).

Paper-reviewed Conference Proceedings

-
- 2022 Valvoda, Josef, Naomi Saphra, **Jonathan Rawski**, Ryan Cotterell, Adina Williams, *Learning Transductions to Test Systematic Compositionality*, COLING.
-
- 2021 Dolatian, Hossep, Jeffrey Heinz, and **Jonathan Rawski**, *Strong Generative Capacity of Morphological Processes*, Proceedings of the Society for Computation in Linguistics, volume 4. Association for Computational Linguistics..
-
- 2020 Nelson, Max, H. Dolatian, **J. Rawski**, B. Prickett, *Probing RNN Encoder-Decoder Generalization of Subregular Functions using Reduplication*, Proceedings of the Society for Computation in Linguistics, volume 3. Association for Computational Linguistics.
-
- 2020 Dolatian, Hossep and **Jonathan Rawski**, *Multi-Input Strictly Local Functions for Templatic Morphology*, Proceedings of the Society for Computation in Linguistics, volume 3. Association for Computational Linguistics.
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- 2020 **Rawski, Jonathan** and Hossep Dolatian, *Multi-Input Strictly Local Functions for Tonal Phonology*, Proceedings of the Society for Computation in Linguistics, volume 3. Association for Computational Linguistics.
-
- 2019 **Rawski, Jonathan**, *Tensor Product Representations of Subregular Formal Languages*, Proceedings of the International Joint Conference on Artificial Intelligence (IJCAI) workshop on Neural-Symbolic Learning and Reasoning.

2019

Chandlee, Jane, R. Eyraud, J. Heinz, A. Jardine, **J. Rawski**, *Learning with Partially Ordered Representations*, In Proceedings of the 16th Meeting of on the Mathematics of Language (SIGMOL 2019), Association for Computational Linguistics (ACL).

Abstract-reviewed Conference Proceedings

2021

Koser, Nate, Hossep Dolatian, **Jonathan Rawski**, and Kristina Strother-Garcia, *Computational Restrictions on Iterative Prosodic Processes*, Proceedings of the Annual Meeting on Phonology.

2019

Dolatian, Hossep and **Jonathan Rawski**, *Finite-State Locality in Semitic Root-and-Pattern Morphology*, Proceedings of the 43rd Penn Linguistics Conference.

2019

Chandlee, Jane, R. Eyraud, J. Heinz, A. Jardine, **J. Rawski**, *How the Structure of the Constraint Space Enables Learning*, Proceedings of the Society for Computation in Linguistics. Association for Computational Linguistics.

2018

De Santo, A., **J. Rawski**, and J.E. Drury., *Quantified Sentences as a Window Into Prediction and Priming: An ERP Study.*, Proceedings of the 54th Meeting of the Chicago Linguistics Society.

2018

Rawski, Jonathan, *Subregular Complexity Across Speech and Sign*, Proceedings of the Society for Computation in Linguistics.

2017

Rawski, Jonathan, *Phonological Complexity Across Speech and Sign*, Proceedings of the 53rd Meeting of the Chicago Linguistics Society.

Peer-Reviewed Invited Book Chapters

in prep Heinz, Jeffrey, Jason Riggle, and **Jonathan Rawski**. *Learnability*. in Nasukawa, Samuels, Schwartz, Torkency (ed.), Wiley-Blackwell Companion to Phonology.

in prep **Rawski, Jonathan** and Connor Mayer. *Computational Approaches to Phonology*. in Nasukawa, Samuels, Schwartz, Torkency (ed.), Wiley-Blackwell Companion to Phonology.

to appear **Rawski, Jonathan**. *Compound Reduction in Signed Phonology*. in J. Heinz (ed.), Doing Computational Phonology.

to appear Alena Aksenova, **Jonathan Rawski** Jeffrey Heinz, Thomas Graf. *The Computational Power of Harmony*. in Harry van der Hulst (ed.), The Oxford Handbook of Vowel Harmony.

2022

Heinz, Jeffrey and **Jonathan Rawski**, *Learnability*, in B. Elan Dresher and Harry van der Hulst (eds.), The Oxford Handbook of the History of Phonology..

2022

De Santo, Aniello and **Jonathan Rawski**, *Mathematical Linguistics and Cognitive Complexity*, in Danesi, Marco (ed.), The Springer Handbook of Cognitive Mathematics.

2022

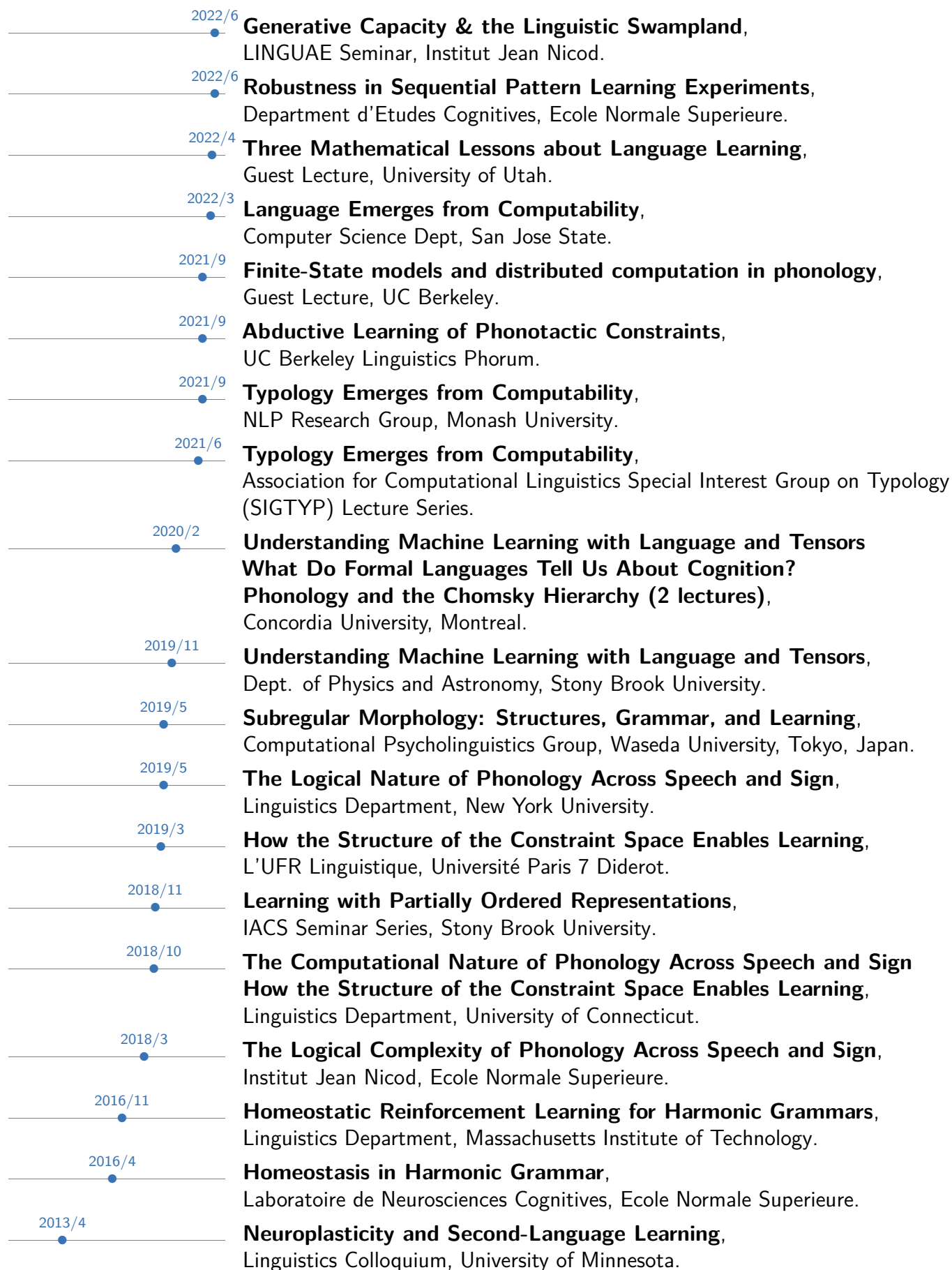
Bakovic, Eric, Jeffrey Heinz, and **Jonathan Rawski**, *Phonological abstraction in the mental lexicon*, in Lila R. Gleitman, Anna Papafragou (ed.), The Oxford Handbook of the Mental Lexicon..

Presentations

Invited Lectures

2022/10

Generative Capacity & the Linguistic Swampland, Linguistics Colloquium, UC Davis.



Conference and Workshop Talks

2022/10

Rawski, Jonathan and Jeffrey Heinz, *BUFIA: Phonotactic Learning with Non-statistical Abductive Inference*, Tutorial given at Annual Meeting on Phonology.

2022/9

Rawski, Jonathan and Lucie Baumont, *Phonology and the Linguistic Swamp-land*, Stony Brook Workshop on Model Theoretic Representations in Phonology.

2021/1

Dolatian, Hossep, Jeffrey Heinz, and **Jonathan Rawski**, *Strong Generative Capacity of Morphological Processes*, Society for Computation in Linguistics.

2020/9

Rawski, Jonathan and Jeffrey Heinz, *What Does "Simplicity" Mean in Grammar Learning?*, Northeast Computational Phonology Circle.

2020/1

Nelson, Max, H. Dolatian, **J. Rawski**, B. Prickett, *Probing RNN Encoder-Decoder Generalization of Subregular Functions Using Reduplication*, Society for Computation in Linguistics.

2020/1

Dolatian, Hossep and **Jonathan Rawski**, *Multi-Input Strictly Local Functions for Templatic Morphology*, Society for Computation in Linguistics.

2019/11

Rawski, Jonathan, *Tensor Product Representations of Formal Languages*, Northeast Computational Phonology Circle, Rutgers University.

2019/8

Rawski, Jonathan, *Tensor Product Representations of Subregular Constraints*, 14th Neural-Symbolic Learning and Reasoning Workshop at the International Joint Conference on Artificial Intelligence (IJCAI), Macau.

2019/7

Rawski, Jonathan, Aniello de Santo, Thomas Graf, Jeffrey Heinz, *Geometric Representations of Linguistic Structures and Computations*, Annual Meeting of the Society for Mathematical Psychology, Montréal, Canada.

2019/7

Jane Chandlee, Remí Eyraud, Jeffrey Heinz, Adam Jardine, **Jonathan Rawski**, *Learning with Partially Ordered Representations*, 16th Meeting on the Mathematics of language (SIGMOL 2019). Toronto.

2019/6

Jane Chandlee, Remí Eyraud, Jeffrey Heinz, Adam Jardine, **Jonathan Rawski**, *Learning with Partially Ordered Representations*, Workshop on Learning and Automata (LearnAut) at the ACM/IEEE Symposium on Logic in Computer Science (LICS 2019).

2019/5

Rawski, Jonathan, *Grammars, Structures, and Learning with Sparse Data*, Stony Brook-Tokyo Institute of Technology Joint Meeting. Tokyo..

2019/5

Jane Chandlee and **Jonathan Rawski**, *Learning with Locality Across Speech and Sign*, Workshop on Rules and Learning Strategies Across Spoken and Signed Language at the 43rd Generative Linguistics in the Old World Conference. Oslo.

2019/5

Dolatian, Hossep and **Jonathan Rawski**, *The Computational Nature of Templatic Morphology*, 4th American International Morphology Meeting. New York.

2019/4

Dolatian, Hossep and **Jonathan Rawski**, *The Computational Nature of Templatic Morphology*, Phonology in the NorthEast. Yale University.

2019/4

Dolatian, Hossep, **Jonathan Rawski**, Sedigheh Moradi, *Computational Implementation of Semitic Template Matching*, Annual Symposium on Arabic Linguistics. Toronto.

2019/3

Dolatian, Hossep, **Jonathan Rawski**, Sedigheh Moradi, *The Computational Nature of Templatic Morphology*, 43rd Penn Linguistics Conference. UPenn, Philadelphia.



2015/6

2013/8

Rawski, Jonathan, *A Homeostatic Space for Optimality Theoretic Grammars*, Pronouns: Syntax, Semantics, Processing Conference, Moscow.

Rawski, Jonathan, *The Influence of Feedback On L2 Phonology Learning*, UROP Summer Symposium, University of Minnesota.

Leadership, Service, and Affiliations

Journal Reviews

2021

Biology.

2020

Journal of Linguistics.

2020

Journal of Language Modeling.

2019

Phil. Trans. Royal Society B: Biological Sciences.

2018

Language.

Conference Service

2023

Program Committee, International Conference on Grammatical Inference (ICGI).

2022

Area Chair, International Conference on Computational Linguistics (COLING).

2022

Program Committee, ACL Special Interest Group on Computational Morphology and Phonology (SIGMORPHON).

2020

Program Committee, ACL Special Interest Group on Computational Morphology and Phonology (SIGMORPHON).

2020

Reviewer, Cognitive Science Society Annual Meeting.

Department/University

SJSU

2021

Curriculum Committee.

2021

Planning Committee for new BSc program "Computer Science & Linguistics".

2021

Department Hiring Committee.

2022

Stony Brook

2018

Student President, Institute for Advanced Computational Science.

2020

2018

Organizer, Stony Brook-Yale-NYU-CUNY (SYNC) Conference.

2017

Organizer, Mathematical Linguistics Reading Group.

2018

2017

Organizer, Northeast Computational Phonology Workshop.

2017

Organizer, Linguistics Colloquium Series.

Community Service

2017

Volunteer, Community Solidarity Association Long Island.

2021

Organized food redistribution from local groceries to local homeless shelters and people in need

Professional Memberships

2019

Society for Mathematical Psychology.

2017
2018
2017
2018

Linguistic Society of America.

Society for the Neurobiology of Language.

Languages

Natural

Native **English**

Advanced **Spanish**

Intermediate **Russian**

Beginner **French**

Formal

L^AT_EX, R, Python, MatLab, Haskell, HTML/CSS

Other Skills

Computational dynamical systems, tree parsing (dependency, minimalist grammars, TAG), finite-
Modeling state string/tree automata, Bayesian probabilistic inference, neural network
modeling,

Experimental Methods EEG, MEG, fMRI, TMS, tDCS