Nathaniel Imel

EDUCATION

| University of California, Irvine | Irvine, CA |
|--|-----------------|
| Ph.D. in Language Science | 2023-now |
| Ph.D. Program in Logic and Philosophy of Science | 2022-2023 |
| University of Washington | Seattle, WA |
| M.S. in Computational Linguistics | 2020-2022 |
| University of California, San Diego | La Jolla, CA |
| B.A. in Philosophy | 2016-2020 |
| Summer Programs | |
| Santa Fe Institute International Summer School (Complexity-GAINS) | Cambridge, 2023 |
| North American Summer School for Logic, Language and Information (NASSLLI) | USC, 2022 |
| Summer School in Logic and Formal Epistemology (LFE) | CMU, 2021 |

PUBLICATIONS

- [1] **N. Imel**, The evolution of efficient compression in signaling games, in *Proceedings of the 45th Annual Meeting of the Cognitive Science Society*, 2023.
- [2] S. Steinert-Threlkeld, **N. Imel**, and Q. Guo, A semantic universal for modality. *Semantics and Pragmatics*, 2023.
- [3] Q. Guo, **N. Imel**, and S. Steinert-Threlkeld, A database for modal semantic typology, in *Proceedings of the 4th Workshop on Research in Computational Linguistic Typology and Multilingual NLP*, Seattle, Washington: Association for Computational Linguistics, Jul. 2022, pp. 42–51.
- [4] **N. Imel** and S. Steinert-Threlkeld, Modals in natural language optimize the simplicity/informativeness trade-off, in *Proceedings of Semantics and Linguistic Theory (SALT 32)*, 2022.

Talks and Presentations

| Modals in natural language optimize the simplicity/informativeness trade-off | |
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| Semantics and Linguistic Theory (Mexico City) | 6/08/22 |
| Experiments in Linguistic Meaning (Philadelphia) | 5/18/22 |
| The evolution of efficient compression in signaling games | |
| University of Tübingen Linguistics Colloquium (virtual) | 7/04/23 |
| CogSci 2023 (Sidney, virtual) | 7/26/23 |

Works in progress

The observed citation-similarity relationship in astrophysics With Zachary Hafen.

Evolutionary dynamics lead to the emergence of efficiently compressed meaning systems With Richard Futrell and Michael Franke. (email for a draft)

An efficient communication analysis of modal typology

With Qingxia Guo and Shane Steinert-Threlkeld. (link)

Deontic priority in the lexicalization of impossibility modals

With Anne Mucha, Wataru Uegaki, and Shane Steinert-Threlkeld. (link).

The artificial language toolkit (ALTK)

With Shane Steinert-Threlkeld. (link).

AWARDS

Merit Fellowships (UC Irvine School of Social Sciences)

2022

Best paper "Desire Semantics", selected for UC San Diego undergraduate philosophy journal Intuitions

2020

TEACHING

Teaching Assistant

Econ 20A Introduction to Symbolic Logic Spring 2023 Winter 2022

GRADUATE COURSEWORK

Experimental Methods
Computability Theory

Xin Xie Toby Meadows

Computability Theory and Incompleteness Game Theory in the Philosophy of Biology

Cailin O'Connor Richard Futrell

Information Theory and Language

Kai Wehmeier

Mathematical Logic Set Theory

Toby Meadows

Social Dynamics

Brian Skyrms and Simon Huttegger

Philosophy of Science Foundations Deep Learning for NLP Kyle Stanford Shane Steinert-Threlkeld

Machine Learning

Shane Steinert-Threlkeld Sewoong Oh and Simon Du

Advanced Statistical Methods for NLP

Fei Xia

NLP Systems and Applications

Gina Anne-Levow

Deep Processing Techniques For NLP Shallow Processing Techniques For NLP Shane Steinert-Threlkeld Fei Xia

Multilingual Grammar Engineering
Syntax for Computational Linguistics

Emily Bender Emily Bender

Syntax for Computational Linguistics

Toshiyuki Ogihara

Formal Semantics II Phonetics

Marina Oganyan

EXPERIENCE

Posh Technologies
NLP Research Intern

Boston, MA

Summer 2021

Performed error analysis experiments of chatbot and presented results to NLP team; wrote unit tests for intent-classification software; curated large datasets and pipelines for ML model evalutaion