

### Education

- 2020–present **PhD, Language Science**, *University of California, Irvine*.  
Algorithmic complexity, spiking and artificial neural networks, language evolution and language change
- 2017–2019 : **Bachelor of Neuroscience and Cognitive Science**, *University of Arizona, Tucson*.  
Minor in Mathematics, Summa Cum Laude

### Papers

- 2025 Charles J Torres, Weijie Xu, Yanting Li, and Richard Futrell. Creolization versus code-switching: An agent-based cognitive model for bilingual strategies in language contact [under review]. *Cognitive Modeling and Computational Linguistics*, 2025.
- 2023 Charles J Torres, Kenneth Hanson, Thomas Graf, and Connor Mayer. Modeling island effects with probabilistic tier-based strictly local grammars over trees. *Proceedings of the Society for Computation in Linguistics*, volume 6, pages 155–164, 2023.
- 2023 Charles Torres and Richard Futrell. Simpler neural networks prefer subregular languages. In *Findings of the Association for Computational Linguistics: EMNLP 2023*, pages 1651–1661, 2023.
- 2023 William Dyer, Charles J Torres, Gregory Scontras, and Richard Futrell. Evaluating a century of progress on the cognitive science of adjective ordering. *Transactions of the Association for Computational Linguistics*, volume 11, 2023.

### Conference Presentations

- 2024 C. J. Torres and R. Futrell. Measuring orthographic complexity. In *California Meeting on Psycholinguistics*, 2024.
- 2024 C. J. Torres and R. Futrell. Compositionality and algorithmic complexity in neural networks. In J. Nölle, L. Raviv, K. E. Graham, S. Hartmann, Y. Jadoul, M. Josserand, T. Matzinger, K. Mudd, M. Pleyer, A. Slonimska, S. Waciewicz, and S. Watson, editors, *The Evolution of Language: Proceedings of the 15th International Conference (Evolang XV)*, 2024.
- 2023 Charles J Torres and Richard Futrell. L0-regularization induces subregular biases in lstms. 2023.
- 2023 C. J. Torres and R. Futrell. Formal languages and computational complexity: seeking explanations for natural language patterns. In J. Nölle, L. Raviv, K. E. Graham, S. Hartmann, Y. Jadoul, M. Josserand, T. Matzinger, K. Mudd, M. Pleyer, A. Slonimska, S. Waciewicz, and S. Watson, editors, *The Evolution of Language: Proceedings of the 15th International Conference (Evolang XV)*, 2023.
- 2023 C. J. Torres and R. Futrell. Formal language and computational complexity: seeking explanations for subregular natural language patterns. In *Human Sentence Processing*, 2023.
- 2021 Yiyun Zhao, Charles Torres, and Masha Fedzechkina. Preferences for shorter dependencies in miniature language learning are modulated by the statistics of learners' l1. *Human Sentence Processing*, 2021.
- 2020 Masha Fedzechkina, Charles Torres, and Yiyun Zhao. Dependency length minimization: An abstract bias or an input-driven preference? *Architectures and Mechanisms for Language Processing*, 2020.

## Research Experience

University of Arizona, Tucson

2019 – 2020 ***Dependency length minimization.***

Collected experimental data on dependency length minimization preferences for speakers of different languages.

Advisor : **Dr. Masha Fedzechkina**, *Professor, Department of Linguistics*

2018 – 2019 ***Connecting morphological complexity to orthography.***

Analyzed length of time languages had writing systems and connected that to the languages' morphological complexity. Would have been presented at Evolang 2020 (canceled due to Covid).

Advisor : **Dr. Andy Wedel**, *Professor, Department of Linguistics*

## Talks

2023 Lecture on algorithmic complexity methods for formal language theory. Presented results at University of California, Irvine Language Science colloquium.

2022 Invited by UCI Data Science Club to give a lecture on two distinct notions of complexity, algorithmic and information theoretic, and how it can be applied in neural networks.

## Fellowships & Awards

2022 Recipient of **DEI Summer Fellowship** to improve accessibility and design a course for teaching a class on formal languages.

2018 Inducted into **Phi Beta Kappa** honor society.

2018 Inducted into **Phi Kappa Phi** honor society.

## Class Talks

2024 Invited to give a lecture entitled ***Tibetan***, a lecture on the grammatical and phonological characteristics of Lhasa Tibetan. Given to the Languages of the World class.

2022 Invited to give a lecture to present work on transducers and weak determinism. Given to the class on Formal Language Theory.

## Work Experience

2024–Present **Linguistics Subject Matter Specialist**, *Top AI Company*, Remote.

Providing linguistics expertise for the creation of an LLM training dataset.

2016–2020 **Tech Support Specialist**, *Banner Health*, Phoenix.

Provided technical support for largest hospital chain in Arizona through troubleshooting hardware and software issues.

2014–2015 **Customer Support Manager**, *APAC*, Tucson.

Provided customer service for a pharmacy benefit manager. Handled escalated calls and training new employees.

2012–2013 **Tech Support Specialist**, *Integrated Axis*, Tucson.

Provided tech support to an array of small businesses in the Tucson area. Hardware and software troubleshooting.

2011–2012 **Tech Support Specialist**, *University of Arizona*, Tucson.

Provided tech support for university students and faculty. Fixed a diverse array of problems including file recovery, OS installation, hardware diagnosis, and malware removal.

## Skills

Programming Languages Python, PyTorch, R, Julia, Scikit-Learn

## Teaching Assistantship

- Winter, 2021: **LSCI 155: Psychology of Language**, University of California - Irvine.  
Spring, 2021: **ANTHRO 2B: Introduction to Biological Anthropology**, University of California - Irvine.  
Fall, 2021: **LSCI 1: Languages of the World**, University of California - Irvine.  
Winter, 2022: **LSCI 3: Introduction to Linguistics**, University of California - Irvine.  
Fall, 2022: **LSCI 1: Languages of the World**, University of California - Irvine.  
Winter, 2023: **LSCI 3: Introduction to Linguistics**, University of California - Irvine.  
Winter, 2023: **LSCI 10: Introduction to Phonology**, University of California - Irvine.  
Fall, 2023: **LSCI 3: Introduction to Linguistics**, University of California - Irvine.  
Winter, 2024: **LSCI 1: Languages of the World**, University of California - Irvine.  
Spring, 2024: **LSCI 119: Phonological Models**, University of California - Irvine.  
Fall, 2024: **LSCI 3: Introduction to Linguistics**, University of California - Irvine.  
Winter, 2025: **LSCI 10: Introduction to Phonology**, University of California - Irvine.