Shiva Upadhye

CONTACT INFORMATION

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3151 Social Sciences Plaza B, Irvine, CA 92617

Education

University of California, Irvine
Ph.D. in Language Science (Cognitive Psychology & Psycholinguistics)   2026
Advisor: Dr. Richard Futrell
Research interests: Computational Psycholinguistics; Cognitive Modeling; Language Production; LLM interpretability;

University of California, San Diego
B.S. in Cognitive Science, Machine Learning & Neural Computation   2020
Minor: Mathematics

Peer-Reviewed and Working Papers

Upadhye S. & Futrell, R. (2025). Back to the Future: The Role of Past and Future Context Predictability in Incremental Language Production. *Under Review.*

Upadhye S.* Li Y.*, Li J.* Attali, N. & Scontras G. (2025). GPT-2's Production and Comprehension of Scope Ambiguity (2025). *PragLM @ Conference on Language Modeling.*

Upadhye S. & Futrell, R. (2025). Examining Future Context Predictability Effects in Word-form Variation and Word Choice. *The Proceedings of the 47th Annual Meeting of the Cognitive Science Society.*

Upadhye S.,* Li J.,* & Futrell, R. (2025). SPACER: A Parallel Dataset of Speech Production And Comprehension of Error Repairs. *The 14th edition of the Workshop on Cognitive Modeling and Computational Linguistics.*

Upadhye S. & Futrell, R. (2023). Typing time PWI: A scalable paradigm for studying lexical production. *Proceedings of the 45th Annual Meeting of the Cognitive Science Society.*

Upadhye S., Bergen L., & Kehler, A (2020). Predicting Reference: What do Language Models learn about Discourse Models? *Proceedings of the 2020 Conference on Empirical Methods in Natural Language Processing.*

Conference Presentations

Yeaton, JD.*, **Upadhye S.***, Yi, E., & Hickok, G. (2025). Speakers and typers adapt their planning strategies to meet sentence production demands. *17th Annual Meeting of the Neurobiology of Language.* Washington DC, USA. (**Poster**)

Upadhye S.* Li Y.*, Li J.* Attali, N. & Scontras G. (2025). GPT-2's Production and Comprehension of Scope Ambiguity (2025). *PragLM @ Conference on Language Modeling.* Montreal, Quebec, Canada. (**Poster**)

Upadhye S. & Futrell, R. (2025). Examining Future Context Predictability Effects in Word-form Variation and Word Choice (2025). *47th Annual Meeting of the Cognitive Science Society.* San Francisco, CA, USA. (**Talk**)

Upadhye S., Yeaton, JD., Yi, E., & Hickok, G. (2025). Typing Fluency reveals Psycholinguistic Dynamics of Sentence Production. *The 38th Annual Conference on Human Sentence Processing.* College Park, MD, USA. (**Poster**)

Upadhye S.*, Li J.* & Futrell, R. (2025). SPACER: A Parallel Dataset of Speech Production And Comprehension of Error Repairs. *The 38th Annual Conference on Human Sentence Processing.* College Park, MD, USA. (**Poster**)

Li Y., Li J., **Upadhye S.**, & Scontras, G. (2025). Language models prefer ambiguous utterances following informative contexts. *The 38th Annual Conference on Human Sentence Processing.* College Park, MD, USA. (**Poster**)

Yeaton, JD, **Upadhye, S.**, Futrell, R., & Hickok, G. (2024). The (Non-)Sentence Repetition Task: A novel assessment of expressive and receptive syntactic competence. *16th Annual Meeting of the Society for the Neurobiology of Language.* Brisbane, Australia. (**Poster**)

Upadhye S., Attali N. & Scontras, G. (2023). The role of world knowledge for interpreting aspect ambiguity. *Tenth Biennial Meeting of Experimental Pragmatics.* Paris, France. (**Poster**)

Li, J.*, **Upadhye, S.*** & Futrell, R. (2023) Bridging production and comprehension: A computational model of error generation and correction. *The 36th Annual Conference on Human Sentence Processing.* Pittsburgh, PA, USA. (**Poster**)

Upadhye S. & Futrell R. (2022). Information-theoretic analysis of disfluencies in speech. *NeurIPS 2022 Workshop on Information Theoretic Principles in Cognitive Systems.* New Orleans, LA, USA. (**Poster**)

Other Experience	*Data Analyst*	Oct 2020 - July 2021

Other Experience

Data Analyst   Oct 2020 - July 2021
Intelligent Fiber Optic Systems Corporation
- Developed signal processing and calibration solutions for fiber optic sensing systems.
- Assisted in the development and writing of Small Business Innovation Research (SBIR) grants focusing on renewable energy applications of fiber-optic sensing.
- Co-inventor on issued US Patent "Dual cavity interferometer sensor system" (US20250224295A1).

Computational Neurosciences Intern   Oct 2019 - Jan 2020
National Center for Microscopy and Imaging Research
- Developed software for automated segmentation of 3-D neuronal images for CDeep3m (Haberl et al. 2018)

Undergraduate Research Assistant/Independent Researcher   Mar 2019 - June 2020
Computational Linguistics Lab (UC San Diego)
- Used computational methods and corpus analyses to investigate naturalistic forms of sluicing (a form of sentential ellipsis)
- Conducted independent research investigating lexico-semantic and discourse structure knowledge in language models

Pedagogy & **Mentorship**	**UC Irvine**
	Instructor 2025
	Introduction to Linguistics (*Summer Session I*)
	Teaching Assistant 2022 - Current
	Introduction to Linguistics, Research methods in Psychology,
	Psychology of Language, Public Policy, Acquisition of Language
	DTEI Graduate Summer Fellow 2022
	Fellowship awarded by the Division of Teaching Excellence and Innovation
	(DTEI) for development and improvement of hybrid pedagogy.
	Graduate Mentor 2024 - Current
	Mentees: Mackenzie Leigh Maxwell, Frankie Boren
	UC San Diego
	Instructional Assistant
	Computational Linguistics 2020

Service and Awards

Program Chair and Organizer
Society for Computation in Linguistics (2024)
Reviewer
Society for Computation in Linguistics (SCiL 2024)
California Meeting on Psycholinguistics (CAMP 2023-2025)
SoCal NLP (2022)
Awards
UCI Center for Theoretical Behavioral Sciences (CTBS) Travel Award (2025)
NeurIPS InfoCog Travel Award (2022)
Graduate Dean's Fellowship, University of California, Irvine (2021 -)

Skills

Programming and Software: Python, R, MATLAB, Clojure, Julia, SQL, STAN, PCIbex, PsychoPy