

Shiva Upadhye

CONTACT INFORMATION

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Education

University of California, Irvine

Ph.D. in Language Science June 2026

Thesis: *Information and Performance Constraints in Online Language Production*

Committee: Richard Futrell (chair), Gregory Hickok, Gregory Scontras, Xin Xie, and Victor Ferreira

University of California, San Diego

B.S. in Cognitive Science (Machine Learning and Neural Computation) June 2020

Minor: Mathematics

Publications

Baidildinova M., **Upadhye S.**, Wagner A., Mayer M., & Futrell, R. (2025). Quantifying Mutual Intelligibility using Language Models: Evidence from Turkic Languages. *Proceedings of the Society of Computation in Linguistics*.

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

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. *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. Li, J., & Futrell, R. (2023) Bridging production and comprehension: A computational model of error generation and correction. *Proceedings of the Society for Computation in Linguistics*.

Upadhye S. & Futrell, R. (2022). Information-theoretic analyses of disfluencies in Speech. *NeurIPS 2022 Workshop on Information-Theoretic Principles in Cognition Systems*.

Last updated: July 2026

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**

Upadhye S. & Futrell, R. (2026). Repairing, Fast and Slow: Lexical and Contextual Pressures on the Timecourse of Error Processing in Naturalistic Production. *The 39th Annual Conference on Human Sentence Processing*. Cambridge, MA, USA. (**Poster**).

Baidildinova, M., **Upadhye S.**, Wagner, A., Mayer, C., & Futrell, R. (2026). Quantifying Mutual Intelligibility using Language Models: Evidence from Turkic Languages. *The 39th Annual Conference on Human Sentence Processing*. Cambridge, MA, 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., Yeaton, JD., Yi, E., & Hickok, G. (2025). Speakers and typers adapt their planning strategies to meet sentence production demands. *66th Annual Meeting of the Psychonomics Society*. Denver, CO, USA. (**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**)

Li J., **Upadhye S.**, Gandhasri, R., & 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 Contributions	Moslehi B., Price W., Moslehi B., Off J., Sourichanh K., Cheng Y., Upadhye S. , & Soutoudeh V. (2025). <i>Dual cavity interferometer sensor system</i> . U.S. Patent No. US20250224295A1. US Patent & Trademark Office.
Teaching & Mentorship	UC IRVINE Instructor of Record Summer 2025 Introduction to Linguistics Pedagogical Training Course Development Fellowship for Language Science (2024) UCI Division of Teaching Excellence & Innovation - Graduate Summer Fellowship & Certificate for Hybrid Inclusive Pedagogy (2022) Teaching Assistant 2022 - 2025 Introduction to Linguistics, Research Methods in Psychology, Psychology of Language, American Public Policy, Acquisition of Language, Discovering Language; Mentorship 2023 - Current Rutvik Mohan Gandhasri, Mackenzie Leigh Maxwell (UROP Fellow - 2024), Frankie Boren, Austin Wagner (UROP Fellow - 2025) UC SAN DIEGO Instructional Assistant Computational Linguistics Spring 2020
Other Experience	<i>AI & Data Analytics Engineer</i> Oct 2020 - July 2021 Intelligent Fiber Optic Systems Corporation • Worked in cross-functional teams with physicists and engineers to develop signal processing solutions for fiber optic sensing systems. • Contributed to the development of research proposals investigating applications of fiber-optic sensing solutions for renewable energy. <i>Computational Neurosciences Intern</i> Oct 2019 - Mar 2020 National Center for Microscopy and Imaging Research • Principal Investigator: Dr. Matthias Haberl • Worked on research and implementation of automated deep-learning based segmentation of 3-D neuronal images. <i>Research Assistant & Undergraduate Researcher</i> Mar 2019 - June 2020 Computational Linguistics Lab at UC San Diego • Principal Investigator: Dr. Andrew Kehler • Conducted independent research investigating the role of verb biases and discourse structure knowledge on language models' pronominalization biases. • Conducted corpus analysis to investigate naturalistic patterns of <i>sluicing</i>—a form of VP ellipsis.
Service, Fellowships, & Awards	Program Chair and Organizer Society for Computation in Linguistics (SCiL 2024) Reviewer Annual Meeting of Cognitive Science Society (Cogsci), Society for Computation in

Linguistics (SCiL), California Meeting on Psycholinguistics (CAMP), SoCal NLP

Awards & Fellowships

Associate Graduate Dean's Fellowship, UC Irvine (2021 - Present; 3 quarters)

UCI Center for Theoretical Behavioral Sciences (CTBS) Travel Award (2025)

Simmons Institute Analytical Connectionism Summer School Fellowship (2024; declined)

Intel Academic GPU Donation Program (2023) - Intel Arc A770 GPU