Kwang S. Kim, Ph.D.
Curriculum Vitae
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Contact Information

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Academic Appointments

Assistant Professor
        Department of Speech, Language, and Hearing Sciences, Purdue University   2023-present
Postdoctoral Scholar   2020-2022
        Department of Otolaryngology-Head and Neck Surgery,
        University of California, San Francisco
        Advisors: John F. Houde, Srikantan S. Nagarajan

Education

Ph.D.   Speech & Hearing Sciences. University of Washington   2020
        Advisor: Ludo Max

B.S.   Bioengineering. University of Washington   2012

Publications

Kim, K. S., Gaines, J. L., Parrell, B., Ramanarayanan, V., Nagarajan, S. S., & Houde, J. F. (in review). Mechanisms of sensorimotor adaptation in a hierarchical state feedback control model of speech. PLOS Computational Biology.

Kitchen, N. M., Kim, K. S., Wang, P. Z., Hermosillo, R. J., & Max, L. (2022). Individual sensorimotor adaptation characteristics are independent across orofacial speech movements and limb reaching movements. Journal of Neurophysiology, 128(3), 696-710.

Gaines, J. L., Kim, K. S., Parrell, B., Ramanarayanan, V., Nagarajan, S. S., & Houde, J. F. (2021). Discrete constriction locations describe a comprehensive range of vocal tract shapes in the Maeda model. JASA express letters, 1(12), 124402. https://doi.org/10.1121/10.0009058

Kim, K. S., & Max, L. (2021). Speech auditory-motor adaptation to formant-shifted feedback lacks an explicit component: reduced adaptation in adults who stutter reflects limitations in implicit sensorimotor learning. The European journal of neuroscience, 53(9), 3093-3108. https://doi.org/10.1111/ejn.15175

Kim, K. S., Daliri, A., Flanagan, J. R., & Max, L. (2020). Dissociated development of speech and limb sensorimotor learning in stuttering: speech auditory-motor learning is impaired in both children and adults who stutter. Neuroscience, 451, 1-21. https://doi.org/10.1016/j.neuroscience.2020.10.014

Kim, K. S., Wang, H., & Max, L. (2020). It's About Time: Minimizing Hardware and Software Latencies in Speech Research With Real-Time Auditory Feedback. Journal of Speech, Language, and Hearing Research: JSLHR, 63(8), 2522-2534. https://doi.org/10.1044/2020_JSLHR-19-00419

Kim, K. S., & Max, L. (2014). Estimating feedforward vs. feedback control of speech production through kinematic analyses of unperturbed articulatory movements. Frontiers in human neuroscience, 8, 911-911.

Presentations & Published Abstracts

Kim, K. S., Nagarajan, S., & Houde, J. F. (2022, December). Speaking-Induced Suppression during auditory-motor adaptation. Poster presented at the 19th Annual UCSF Radiology Imaging Research Symposium.

Kim, K. S., Nagarajan, S., & Houde, J. F. (2022, August). The effects of error-clamping auditory feedback. Poster presented at the 8th International Conference on Speech Motor Control.

Gaines, J., Kim, K. S., Parrell, B., Ramanarayanan, V., Nagarajan, S., & Houde, J. F. (2022, August). Bayesian Inference of State Feedback Control Model Parameters for Pitch Perturbation Responses. Poster presented at the 8th International Conference on Speech Motor Control.

Kim, K. S., Gaines, J., Parrell, B., Ramanarayanan, V., Nagarajan, S., & Houde, J. F. (2022, August). Prediction errors drive auditory-motor adaptation in a hierarchical FACTS model. Poster presented at the 8th International Conference on Speech Motor Control.

Gaines, J., Kim, K. S., Parrell, B., Ramanarayanan, V., Nagarajan, S., & Houde, J. F. (2020, December). Discrete constriction locations describe a comprehensive range of vocal tract shapes in the Maeda model. Poster presented at the 12th International Seminar on Speech Production.

Max, L. & Kim, K. S. (2019, December). Self-monitoring of speech production in individuals who stutter. The Journal of the Acoustical Society of America 146, 2791-2791.

Kim, K. S., & Max, L. (2019, November). Speech auditory-motor adaptation is driven by implicit learning. Program No. 758.10. 2019 Neuroscience Meeting Planner. Chicago, IL: Society for Neuroscience, 2019. Online.

Kim, K. S., & Max, L. (2018, November). Sensorimotor learning in children and adults who stutter. Program No. 588.18. 2018 Neuroscience Meeting Planner. San Diego, CA: Society for Neuroscience, 2018. Online.

Kim, K. S., & Max, L. (2018, November). Speech & Nonspeech Sensorimotor Learning in Stuttering: An Integrated View of Developmental & Adult Data. Presented at the annual convention of the American Speech-Language-Hearing Association, Boston, MA.

Kim, K. S., & Max, L. (2018, May). Integrating data from speech and limb sensorimotor learning tasks in children and adults who stutter. Presented at the annual meeting of the Society for the Neural Control of Movement, Santa Fe, New Mexico.

Kim, K. S., Mitsuya, T., Wang, P. Z., & Max, L. (2017, November). Speech auditory-motor learning: are adaptation and de-adaptation similarly affected by practice schedule? Program No. 408.09. 2017 Neuroscience Meeting Planner. Washington, DC: Society for Neuroscience, 2017. Online.

Mitsuya, T., Kim, K. S., Wang, P. Z., & Max (2017, November). Is the number of practice trials or exposure duration most critical for speech auditory-motor learning? Presented at the annual convention of the American Speech-Language-Hearing Association, Los Angeles, CA.

Kim, K. S., Mitsuya, T., Wang, P. Z., & Max, L. (2017, July). Effects of exposure time versus practice rate on speech auditory-motor adaptation and de-adaptation. Stem-, Spraak- en Taalpathologie, 22, S54. Presented at the 7th International Conference on Speech Motor Control, Groningen, the Netherlands.

Kim, K. S., Hermosillo, R. J., Wang, P. Z., Ostry, D. J., & Max, L. (2016, November). Sensorimotor adaptation in unrelated effector systems: common or distinct learning mechanisms? Presented at the annual convention of the American Speech-Language-Hearing Association, Philadelphia, PA.

Hermosillo, R. J., Kim, K. S., Wang, P. Z., Ostry, D. J., & Max, L. (2016, April). Sensorimotor adaptation in unrelated effector systems: common or distinct learning mechanisms? Presented at the annual meeting of the Society for the Neural Control of Movement, Montego Bay, Jamaica.

Kim, K. S., Hermosillo, R. J., Anderson, A. K, Wang, P. Z., Ostry, D.J., & Max, L. (2016, March). Do distinct sensorimotor learning mechanisms underlie auditory-motor speech adaptation and visuo-motor reach adaptation? Presented at the Conference on Motor Speech, Newport Beach, CA.

Kim, K. S., & Max, L. (2011, November). Relationship among kinematic landmarks in the speech movements of stuttering and nonstuttering adults. Program No. 809.10. 2011 Neuroscience Meeting Planner. Washington, DC: Society for Neuroscience, 2011. Online.

Kim, K. S., & Max, L. (2011, June) Quantifying feedforward versus feedback control through kinematic analyses of unperturbed speech movements. Poster presented at the 9th International Seminar on Speech Production, Montreal, Canada.

Kim, K. S., & Max, L. (2011, June). Quantifying feedforward versus feedback control through kinematic analyses of unperturbed speech movements. Stem-, Spraak- en Taalpathologie, 17, S65. Poster presented at the 6th International Conference on Speech Motor Control, Groningen, The Netherlands.

Maruthy, S., Kim, K. S., Baldwin, C. J., Feng, Y., & Max, L. (2010, November). Experimental variables affecting speech sensorimotor adaptation to formant-shifted auditory feedback. Program No. 593.10. 2010 Neuroscience Meeting Planner. San Diego, CA: Society for Neuroscience, 2010. Online.

Kim, K. S., Huang, R. & Max, L. (2010, November). Kinematic analyses of feedforward versus feedback control in speech production. Presented at the annual meeting of the American Speech-Language-Hearing Association, Philadelphia, PA.

Funding

2021-2022   "Neural basis of auditory-motor adaptation"
National Institute on Deafness and other Communication Disorders
F32 DC019538 (PI: Kim, Sponsors: Houde & Nagarajan)

2016   New Century Scholars Doctoral Scholarship
American Speech-Language-Hearing Foundation

Honors and Awards

2022   Best Poster Presentation at the 19th Annual Radiology Imaging Research Symposium, UCSF
2020   Postdoc Work-at-Home award, UCSF
2016   Graduate School Fund for Excellence and Innovation, UW (2016 Motor Speech Conference)
2016   Lesley B. & Steven G. Olswang Travel Fund, UW (2016 Motor Speech Conference)
2011-2012   Washington Research Foundation Fellowship, Washington Research Foundation
2011   Undergraduate Research Conference Travel Award, UW (2011 International Seminar on Speech Production)
2011   Rex. J. and Ruth C. Robinson Scholarship Fund in Chemistry, UW
2010-2011   Undergraduate Research Conference Travel Award, UW (2010, 2011 Society for Neuroscience)
2010-2011   Annual Dean's List High Scholarship, UW
2010-2011   Mary Gates Endowment Research Scholarship, UW

Teaching

2023   Instructor, Intro to Neural Bases of Speech and Hearing (SLHS 41900), Department of Speech, Language, and Hearing Sciences, Purdue University
2016   Instructor, Speech Signal Processing (SPHSC 525), Department of Speech & Hearing Sciences, University of Washington
2015-2018   Teaching assistant, Fluency disorders (SPHSC 537), Department of Speech & Hearing Sciences, University of Washington

Mentoring

2022-2022   Nicole Roberts, Research Initiative to Promote Diversity in Radiology (UCSF)

2021-present	Kurtis Brent, UCSF/Berkeley Graduate Program in Bioengineering
2021-2021	Serena Tang, UCSF/Berkeley Graduate Program in Bioengineering
2020-present	Jessica Gaines, UCSF/Berkeley Graduate Program in Bioengineering

Community Service & Outreach

2022	Mentor, Research Initiative to promote Diversity in Radiology, University of California, San Francisco (UCSF), San Francisco, CA
2020	Participant, University of Washington Women's Center Making Connections (MC) Program, Seattle WA
2019	Participant, Olympic Hill Elementary School Science Fair, Seattle WA
2018	Participant, Olympic Hill Elementary School's speech lab visit, Seattle WA
2017-2018	Volunteer, ROOTS Young Adult Shelter
2014-2019	Participant, Paws on Science, Pacific Science Center, Seattle WA
2013	Volunteer, Wallingford Boys & Girls Club, Seattle WA
2012-2013	Volunteer, Tutor/teacher's assistant for Physics, Garfield High School, Seattle WA

Invited Talks and Colloquia

2023	Speech, Language, and Hearing Sciences Weekly Seminar, Purdue
2021	Brain Development Imaging (Research Interests Group), UCSF Radiology
2019	Haskins Laboratories, New Haven, CT

Journal Reviews

2022	Journal of Fluency Disorder
2021	Neurobiology of Language
2020	Journal of Fluency Disorder

Software Development

SPEA-K (https://github.com/MaxLabSoftware/SPEA-K).
 MATLAB program that allows users with or without programming experience to test children in speech experiments with auditory feedback perturbations.
 Role: Co-developer

Vocal Tract Models (https://github.com/satra/VocalTractModels).
 A MATLAB-based software for a vocal tract model simulator and area function synthesizer based on the Maeda model, developed by Dr. Shinji Maeda. The software was developed and refined by Dr. Satrajit Ghosh.
 Role: Contributor

Feedback Utility for Speech Production (FUSP).
 A digital signal processing software library for auditory feedback perturbation, developed by Dr. John Houde and colleagues.
 Role: Contributor

Feedback-Aware Control of Tasks in Speech (FACTS, https://github.com/kwangsk/FACTS).
 An updated version of the FACTS model of speech motor control, originally developed by Dr. Benjamin Parrell and colleagues. The code is currently being implemented and tested in Python.
 Role: Co-developer

Societies

Society for Neuroscience
Society for the Neural Control of Movement
National Student Speech Language Hearing Association
National Stuttering Association