

ALAN ZHOU

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EDUCATION

Johns Hopkins University
PhD in Cognitive Science






Baltimore, MD
Aug. 2022 - Present

University of California, Berkeley
B.A. in Computer Science and Cognitive Science

Berkeley, CA
Aug. 2017 - Dec. 2021

PUBLICATIONS

Peer-reviewed Journals and Conferences

- (Accepted) Gašper Beguš, **Alan Zhou**, Peter Wu, and Gopala K Anumanchipalli. Articulation gan: Unsupervised modeling of articulatory learning. In *ICASSP 2023 IEEE International Conference on Acoustics, Speech and Signal Processing*. [arXiv](#) 
- (Accepted) Gašper Beguš, **Alan Zhou**, and Christina Zhao. Encoding of speech in convolutional layers and the brain stem based on language experience. *Scientific Reports*. [PDF](#) 
- (2022) Gašper Beguš and **Alan Zhou**. Interpreting intermediate convolutional layers of generative cnns trained on waveforms. *IEEE/ACM Transactions on Audio, Speech, and Language Processing*, 30. [PDF](#) 
- (2022) Gasper Begus and **Alan Zhou**. Modeling speech recognition and synthesis simultaneously: Encoding and decoding lexical and sublexical semantic information into speech with no direct access to speech data. In *Proc. Interspeech 2022*. [PDF](#) 
- (2022) Gašper Beguš and **Alan Zhou**. Interpreting intermediate convolutional layers in unsupervised acoustic word classification. In *ICASSP 2022 IEEE International Conference on Acoustics, Speech and Signal Processing*. [PDF](#) 

EXPERIENCE

Berkeley Speech and Computation Lab
Undergraduate Research Assistant | PI: Gašper Beguš

Berkeley, CA
November 2020 to December 2021

- Probed intermediate representations of speech in generative adversarial networks
- Compared intermediate representations in GANs with the auditory brainstem response via latent vector recovery of recorded stimuli


Berkeley Division of Data Science
Research Apprentice | Mentor: Taka'aki Taira

Berkeley, CA
January 2019 to January 2020

- Recovered underlying stress fields from earthquake data using weighted least squares
- Created scripts to calculate and visualize information about the faulting regime, stress orientation, and confidence level of stress fields across Northern California


PROJECTS

F-ZERO Reinforcement Learning Agent

A reinforcement learning agent trained to play the SNES racing game F-ZERO
([GitHub](#) 

- Utilized socket programming to allow an emulator with Lua scripting capabilities to interface with Python and PyTorch
- Used deep Q-learning to create an agent capable of racing in a 3D environment given only screen input

Markov Bot

A Discord bot that creates Markov chains out of user messages in order to simulate text.
([GitHub](#) 

- Developed a means to construct Markov chains for individual users, and to generate novel sentences using constructed chains

SKILLS

Programming Languages:	Python, Java, C, MATLAB, R, Lua, SQL
Tools/Technologies:	PyTorch, Tensorflow, Keras, Slurm, matplotlib Jupyter, Git, Gradle/Maven
Natural Languages:	English (fluent), Mandarin (conversational)