

ALAN ZHOU

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EDUCATION

University of California, Berkeley

B.A. Computer Science and Cognitive Science

GPA: 3.605

Berkeley, CA

December 2021

Relevant Coursework: Deep Learning (CS182), Machine Learning (CS189), Artificial Intelligence (CS188), Linguistics (LING 100), Cognitive Neuroscience (COGSCI C127), Computational Models of Cognition (COGSCI 131)

PUBLICATIONS

Preprints and Under Review

Beguš, G., **Zhou, A.**, & Zhao, T. C. (2022). Encoding of speech in convolutional layers and the brain stem based on language experience. *bioRxiv*, 2022.01.03.474864. [↗](#)

Beguš, G., & **Zhou, A.** (2021). Interpreting intermediate convolutional layers in unsupervised acoustic word classification. Under Review. *arXiv*, 2110.02375. [↗](#)

Beguš, G., & **Zhou, A.** (2021). Interpreting intermediate convolutional layers of CNNs trained on raw speech. Under Review. *arXiv*, 2104.09489. [↗](#)

RESEARCH EXPERIENCE

Berkeley Speech and Computation Lab

Undergraduate Research Assistant | PI: Gašper Beguš

Berkeley, CA

November 2020 to Present

- 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
- Iterated on and tested a InfoGAN-based architecture for unsupervised classification

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

TEACHING EXPERIENCE

CS61B

Academic Intern

Berkeley, CA

January 2019 to May 2019

- Helped students with questions about Java, data structures, and algorithms during office hours and lab sections

Guest Lectures:

"Intro to Savio and Slurm." Guest lecture given for the class LING290E: Deep Learning and Phonology taught by Gašper Beguš, October 2021.

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 [↗](#))

- Implemented a general-order Markov chain using Java and SQL
- 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
Languages:	English (fluent), Mandarin (conversational)