Beige (Jerry) JIN

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EDUCATION

University of California, Berkeley **Berkeley, CA**

Master in Statistics *May 2024*

- *GPA:* 4.0/4.0
- *Relevant Coursework:* Advanced Probability, Advanced Statistics, Statistical Computing, Linear Models, Machine Learning

Peking University **Beijing**

Bachelor in Logic and Philosophy of Science and Technology *July 2023*

Bachelor in Psychology (Double Major)

- *Cumulative GPA:* 3.8/4.0 (rank 3/49); *Double Major GPA:* 3.9/4.0
- *Relevant Coursework:* Python Programming, MATLAB-based Research Method, Advanced Mathematics, Linear Algebra, Numerical Algebra, Mathematical Logic, System and Computational Neuroscience
- *Honors:* Outstanding Graduate, 3-Year Merit Student (top 5%), First-class Scholarship, Robin Li Scholarship

University of California, Berkeley **Berkeley, CA**

Exchange Student *Aug 2021 - Dec 2021*

- *GPA*: 4.0/4.0
- *Relevant Coursework:* Methods for Research in Psychological Sciences, Brain Imaging Analysis, Cognitive Neuroscience

RESEARCH EXPERIENCES

Feedback Control and Gain Modulation in Neural Networks **Berkeley, CA**

Research Assistant, advised by Professor Kristofer Bouchard, Lawrence Berkeley National Laboratory *Sep 2023 – Now*

- Applied feedback control on neuronal excitability (i.e., response gains) and modulated synaptic weights by Hebbian learning to build more biologically realistic neural networks
- Established feedforward neural networks and recurrent neural networks in Python to simulate non-linear functions
- Investigated the properties of transfer of learning and adaptation under perturbation in these neural networks

CMR-IA: A Computational Model of Memory **Philadelphia, PA**

Research Assistant, advised by Professor Michael J. Kahana, University of Pennsylvania *July 2022 – Aug 2023*

- Developed the Context-Maintenance and Retrieval model for Items and Associations (CMR-IA), a computational model of memory based on previous CMR models
- Implemented the model in Python, performed simulation on eight classic experimental paradigms and two new experiments, thus accounted for several benchmark phenomena concerning recognition and cued recall including recency effects, similarity effects, contiguity effects, word frequency effects, and associative symmetry
- Offered a unified theoretical framework for memory of items and associations
- Poster accepted by Cognitive Neuroscience Society (CNS 2024)

Temporal Dynamics in Serial Dependence **Beijing**

Research Assistant, advised by Professor Huan Luo, Peking University *June 2021 – Oct 2022*

- Investigated the attractive bias in perception and decision caused by previous experience, i.e., serial dependence
- Conducted four behavioral experiments with novel paradigms and self-written programs in MATLAB and JavaScript
- Analyzed the experiment data from a temporal perspective and revealed a build-down in serial dependence and visual adaptation throughout the experimental session, which was neglected by most previous studies

PROJECTS

Digital Twins for Alzheimer's Disease Patients **Berkeley, CA**

Master's Capstone Project, advised by Professor Thomas Bengtsson, University of California, Berkeley *Feb 2024 – Now*

- Developed digital twins for Alzheimer's Disease patients, i.e., predictions of outcomes for individual patients describing their likely progression in the future under standard-of-care given their baseline characteristics
- Exploited the Alzheimer's Disease Neuroimaging Initiative (ADNI) database and extracted features including psychological assessments, biospecimen, genetics, and PET imaging
- Trained a Conditional Restricted Boltzmann Machine in Python to perform the prediction and evaluated it against baseline models such as ridge regression and random forest

Schizophrenia Classifier **Berkeley, CA**

Course Project, advised by Professor Kevin Weiner, University of California, Berkeley *Nov 2021 – Dec 2021*

- Investigated whether anatomical features (cortical thickness) or functional features (task-based functional connectivity) are better at classifying schizophrenia through analyzing an open-source fMRI dataset on OpenNeuro

- Trained Support Vector Machine classifiers using Scikit-learn based on anatomical features and functional features
- Reached a peak accuracy of 84% and found functional features are of greater discriminability than anatomical features

PUBLICATION

Jin, B., Wu, Y., & Lo, C. K. (2021). Are Situation Models Embodied? *Proceedings of the 2021 4th International Conference on Humanities Education and Social Sciences (ICHESS 2021)*, 2710–2715. https://doi.org/10.2991/assehr.k.211220.468

SKILLS

Programming Skills: Python, MATLAB, R, HTML/CSS/JavaScript
Frameworks / Tools: Git, LATEX, Jupyter, Anaconda, Docker, Vim
Language Skills: Chinese (Native); English (Fluent, GRE: 336, TOEFL: 113)