clara wong-fannjiang

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education

University of California, Berkeley   August 2018 - present

Ph.D., Electrical Engineering & Computer Sciences
Advised by Jennifer Listgarten and Michael I. Jordan

Stanford University   September 2012 - June 2016

B.S., Computer Science with Honors and Distinction

publications

Asterisks denote equal contribution.

preprints

1. Improving packaging and diversity of adeno-associated virus libraries with machine learning. Danqing Zhu*, David H. Brookes*, Akosua Busia, Ana Carneiro, **Clara Fannjiang**, Galina Popova, David Shin, Tomasz J. Nowakowski, Jennifer Listgarten, and David. V. Schaffer. ([bioRxiv](#))

2. Chloe Hsu, Hunter Nisonoff, **Clara Fannjiang**, Jennifer Listgarten. Learning protein fitness models from evolutionary and assay-labelled data. Accepted at *Nature Biotechnology*. ([bioRxiv](#))

3. Akosua Busia, George E. Dahl, **Clara Fannjiang**, David H. Alexander, Elizabeth Dorfman, Ryan Poplin, Cory Y. McLean, Pi-Chuan Chang, and Mark DePristo. A deep learning approach to pattern recognition for short DNA. DOI: 10.1101/353474. ([bioRxiv](#))

refereed conferences

1. Ghassen Jerfel*, Serena Wang*, **Clara Fannjiang**, Katherine Heller, Yian Ma, Michael Jordan. Variational refinement for importance sampling using the forward Kullback-Leibler divergence. Uncertainty in Artificial Intelligence (UAI) 2021. A previous version of this work appeared in Advances in Approximate Bayesian Inference (AABI) 2021. ([arXiv](#))

2. **Clara Fannjiang** and Jennifer Listgarten. Autofocused oracles for model-based design. Neural Information Processing Systems (NeurIPS) 2020. ([arXiv](#) | [proceedings](#) | [code](#))

3. David H. Brookes, Akosua Busia, **Clara Fannjiang**, Kevin Murphy, and Jennifer Listgarten. A view of estimation of distribution algorithms through the lens of expectation-maximization. Genetic and Evolutionary Computation Conference (GECCO) 2020. ([arXiv (extended version)](#) | [proceedings](#))

workshops

1. Katherine Lee, Orhan Firat, Ashish Agarwal, **Clara Fannjiang**, and David Sussillo. Hallucinations in neural machine translation. Neural Information Processing Systems (NeurIPS) 2018 Workshop on Interpretability and Robustness for Audio, Speech, and Language. ([PDF](#))

journals

1. I. Masmitja, J. Navarro, S. Gomariz, J. Aguzzi, B. Kieft, T. O'Reilly, K. Katija, P. J. Bouvet, **C. Fannjiang**, M. Vigo, P. Puig, A. Alcocer, G. Vallicrosa, N. Palomeras, M. Carreras, J. Del-Rio, J. B. Company. 2020. Mobile robotic platforms for the acoustic tracking of deep-sea demersal fishery resources. *Science Robotics*, Vol. 5, Issue 48, eabc3701. ([PDF](#) | [publication link](#))

2. **Clara Fannjiang**, T. Aran Mooney, Seth Cones, David Mann, K. Alex Shorter, and Kakani Katija. 2019. Augmenting biologging with supervised machine learning to study *in situ* behavior of the medusa *Chrysaora fuscescens*. *Journal of Experimental Biology*, 222, jeb207654. DOI: 10.1242/jeb.207654. ([PDF](#) | [publication link](#) | [code](#))
3. **Clara Fannjiang**. 2013. Optimal arrays for compressed sensing in snapshot-mode radio interferometry. *Astronomy & Astrophysics*, 559, A73. DOI: 10.1051/0004-6361/201321079. ([PDF](#) | [publication link](#))

other conferences

1. Ivan Masmitja, Spartacus Gomariz, Joaquin Del Rio, Brian Kieft, Tom O'Reilly, Jacobo Aguzzi, Pierre-Jean Bouvet, **Clara Fannjiang**, and Kakani Katija. Area-only method for underwater object tracking using autonomous vehicles. IEEE OCEANS 2019. ([PDF](#) | [proceedings](#))
2. **Clara Fannjiang** and Kakani Katija. Using supervised machine learning to understand fine-scale *in situ* behavior of *Chrysaora fuscescens*. Society for Integrative and Comparative Biology (SICB) 2019 Annual Meeting. Oral, Marlene Zuk Best Student Paper Finalist.
3. **Clara Fannjiang**, Marius Cătălin Iordan, Diane M. Beck, and Fei-Fei Li. Pushing the boundaries of fine-grained object classification with fMRI decoding in human occipito-temporal cortex. Vision Sciences Society (VSS) 2015 Annual Meeting. Poster. DOI: 10.1167/15.12.1167. ([abstract](#))

professional experience

Monterey Bay Aquarium Research Institute, Research Assistant   2018 - 2019
> Designed and conducted biologging field experiments on jellyfish in Monterey Bay, CA. Developed supervised learning methods to characterize novel fine-scale *in situ* behavioral and movement patterns.

Google, Google Brain Resident   2016 - 2017
> Developed regularization schemes for suppressing chaotic dynamics in recurrent neural networks. Contributed to deep learning approach for taxonomic identification of genetic reads.

teaching

university of california, berkeley

STAT 102: Data, Inference, and Decisions (Graduate Student Instructor)	Fall 2020 - 2021
STAT 102: Data, Inference, and Decisions (Graduate Student Instructor & Guest Lecturer)	Spring 2019 - 2020

stanford university

EE 364A: Convex Optimization (Teaching Assistant)	Winter 2015 - 2016
EE 103: Introduction to Matrix Methods (Teaching Assistant)	Fall 2015 - 2016

leadership & outreach

Mentor for Berkeley AI Research Undergraduate Mentoring Program	2019 - present
Coordinator for UC Berkeley WICSE	2019 - 2020
Docent at Jasper Ridge Biological Preserve	2016 - present
Co-Instructor for Stanford Splash! M4053: For the Love of Optimization	Fall 2014
Co-Instructor for Stanford Splash! B4329: The Biology of Vision and Perception	Spring 2015
Organizer for Stanford SAILORS (now Stanford AI4ALL)	2014

honors & awards

NSF Graduate Research Fellowship	2019
SICB Marlene Zuk Best Student Paper Finalist	2019
UC Berkeley Allen D. Wilson Fellowship (*declined*)	2017
UC Berkeley EECS Excellence Award (*declined*)	2017
Tau Beta Pi National Honor Society for Engineering	2016
Stanford University President's Award for Excellence in the Freshman Year	2013