Ho Yin Chau

CONTACTS	**hchau630@berkeley.edu** 415-638-0061
EDUCATION	**Columbia University**, New York City, NY Ph.D. Neurobiology and Behaviour, 2020 – 2026 (expected) **University of California, Berkeley**, Berkeley, CA B.A. Molecular & Cell Biology (Neurobiology track), 2016 – 2020 B.A. Physics (Honors), 2016 – 2020 B.A. Mathematics, 2016 – 2020 • Minor in Computer Science • Minor in Creative Writing • GPA: 3.91/4.0

RESEARCH EXPERIENCES

Redwood Center for Theoretical Neuroscience, Berkeley, CA, Spring & Fall 2019
- **Undergraduate Researcher**, working with Prof. Bruno Olshausen
- Unsupervised learning of disentangled representation of images
- Unsupervised learning and inference in hierarchical Bayesian networks

Summer Undergraduate Research Program in Computational Neuroscience, Center for the Neural Basis of Cognition, Pittsburgh, PA, Summer 2019
- **Participant**, working with Prof. Tai-Sing Lee & Dr. Wenhao Zhang
- Computational modelling of 'opposite neurons' in MSTd

Deep Learning DeCal, Machine Learning @ Berkeley, Berkeley, CA, Fall 2017
- **Participant**, collaboration with Brandon Trabucco & Ani Nrusimha
- Independent research topic: "Neural Program Synthesis Using Variational GAN"

Undergraduate Research Apprentice Program, UC Berkeley, Berkeley, CA, Sept 2016 – Aug 2017
- **Participant**, working with Prof. Kam-Biu Luk at the Lawrence Berkeley National Laboratory
- Calibrating cosmic muon detector, writing Monte Carlo simulations, testing liquid scintillator

PREPRINTS
(* denote co-first authors)

H.Y. Chau, F. Qiu, Y. Chen, B. Olshausen, *Disentangling images with Lie group transformations and sparse coding*. arXiv:2012.12071 (2020)

*X. Niu, *H.Y. Chau, W.H. Zhang, T.S. Lee, *Emergence of opposite neurons in a firing-rate model of multisensory integration*. bioRxiv: 845743 (2019)

POSTERS

H.Y. Chau, X.Y. Niu, W.H. Zhang, T.S. Lee, *Emergence of opposite neurons in a circuit for multisensory processing*. Computational and Systems Neuroscience Workshop (COSYNE) 2020, Denver, CO. Feb 27, 2020.

SELECTED AWARDS & HONORS

Graduate Research Fellowship (GRF), National Science Foundation (NSF), 2020 – 2026

L. Jackson Laslett Scholarship, UC Berkeley Physics, 2019 – 2020

Jim and Donna Gray Award, UC Berkeley Electrical Engineering & Computer Science, 2018 – 2019

Olsen Memorial Fund Award, UC Berkeley Physics, 2018 – 2019

The Cal Hacks Fellowship, Cal Hacks 4.0, 2018

Dean's Honors, UC Berkeley, 2017 – 2019

Hong Kong Scholarship for Excellence Scheme, HKSAR Education Bureau, 2016 – 2020

OTHER EXPERIENCES & PROJECTS	**Icebox**, Berkeley, CA, 2018

Icebox, Berkeley, CA, 2018

- **Co-founder, Software Engineer** (iOS developer), working with Jasmine Singh & Julia Yu
- Startup in grocery management, admitted into Skydeck incubation track in summer 2018

Video Game Design and Development DeCal, Game Design and Development at Berkeley, Berkeley, CA, Spring 2018

- 2D adventure PC game developed: **Arkangel**

COMUNNITY OUTREACH

ExperiMentors, Diocesan Boys' School, Hong Kong, China, 2015

- **Co-founder, Secretary**
- Non-profit student organization holding science summer camps for primary school students