

Curriculum Vitae
Hoki Fung
Research Associate

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RESEARCH INTERESTS

With a background in Psychology and Cognitive Neuroscience, my research explores the neural basis of higher executive function such as decision making in healthy adults, and investigates how these brain mechanisms might be compromised in certain clinical populations.

I conduct behavioral and neuroimaging experiments and utilize various statistical techniques to identify structural and/or functional features of neurological disorders.

In addition to running in-house brain-and-behavior experiments, I analyze large and publicly available brain datasets using machine learning and deep learning. Some recent projects include classifying healthy and ADHD brains, automating lesion segmentation, and predicting children's habits from brain images.

CURRENT POSITION

Research Associate, Cognitive Neuroscience

Sleep and Cognition Laboratory - SCL
Yong Loo Lin School of Medicine, National University of Singapore

Advisors:
Prof. Michael Chee,
Dr. Ju Lynn Ong

Jan 2020 -
Full time

EDUCATION

Master of Computing in Artificial Intelligence	National University of Singapore	Expected 2022
Professional Certificate in Data Science	Harvard University (HarvardX)	2018 - 2020
Master of Research in Cognitive Neuroscience	University College London	2015 - 2016
Bachelor of Arts in Psychology <i>Departmental Honors & Minor in Education</i>	University of California, Berkeley	2013 - 2015

ADDITIONAL EDUCATION

Neuroimaging & Data Science Summer Course	Neurohackademy	Summer 2020
Computational Neuroscience Summer Course	Neuromatch Academy	Summer 2020
Human Brain Mapping Education Courses	Organization for HBM	Summer 2020

PAST EXPERIENCES

Data Scientist, Clinical MR Data

Clinical Imaging Research Centre - CIRC
(now Centre for Translational MR Research - TMR)
National University of Singapore, Singapore

Advisors:
A/Prof. Thomas Yeo,
Dr. Mary Stephenson,
Dr. John J. Totman

Jan 2019 - Jan 2020
Full time

Data Analyst Intern, Machine Learning <i>Datature Analytics (formerly SEER Analytics), Singapore</i>	Supervisor: Mr. Keechin Goh	Jan 2019 - Dec 2019 <i>Intern</i>
Research Associate, Neuropsychology <i>Clinical Brain Lab - CBL</i> <i>Nanyang Technological University, Singapore</i>	Advisors: Prof. Annabel Chen, Dr. Shu-Hui Lee	Dec 2016 - Dec 2018 <i>Full time</i>
Student Research Assistant <i>Metacognition & Executive Functions Group, ICN</i> <i>University College London, UK</i>	Advisor: A/Prof. Sam J. Gilbert	Oct 2015 - Aug 2016 <i>Assistantship</i>
Undergraduate Honors Scholar <i>Department of Psychology,</i> <i>University of California, Berkeley, USA</i>	Advisor: Prof. Alison Gopnik	Sep 2014 - May 2015 <i>Field Work</i>
Undergraduate Research Assistant <i>Gopnik Cognitive Developmental Lab,</i> <i>University of California, Berkeley, USA</i>	Advisor: Dr. Adrienne O. Wenté	Sep 2013 - May 2015 <i>Assistantship</i>

PEER-REVIEWED PUBLICATIONS

- Gilbert, S. J. & Fung, H. (2018). Decoding intentions of self and others from fMRI. *NeuroImage*, 172, 278-290. doi:10.1016/j.neuroimage.2017.12.090
- Gopnik, A., O'Grady, S., Lucas, C., Griffiths, T., Wenté, A., Bridger, S., Aboody, R., Fung, H., and Dahl, R. (2017). Changes in cognitive flexibility and hypothesis search from childhood to adolescence to adulthood. *Proceedings of the National Academy of Sciences*, 114(30), 7892-7899. doi:10.1073/pnas.170081114

HONORS AND AWARDS

Sector Winner, SLINGSHOT - Asia Deep Tech Competition	Team: Datature Analytics	2019
Grand Prize, Rolls-Royce Data Innovation Challenge - Asia	Team: SEER Analytics	2019
Departmental Honors, Department of Psychology, UC Berkeley	Individual	2015
Trustee's Prize for General Excellence, Dean College	Individual	2013
President's List, Dean College	Individual	2011-2013
Harry L. Kreshpane Prize, Dean College	Individual	2012

INTERNATIONAL CONFERENCE PRESENTATIONS

- Fung H., Ong J.L., Yeo B.T.T., & Chee W.L.M. (2021, June). *Associations of Sleep Duration with Global Cognition and Gray Matter Volume in Children aged 9 to 11*. Poster to be presented at the Annual Meeting of OHBM
- Lin H.Y., Fung H., Gan S.R., Gupta B., Ho R.C., & Chen S.H.A. (2019, Oct). *Cortical thickness in prefrontal cortex associating with sensitivity to reward and punishment in ADHD and healthy adults*. Poster presented at the Annual Meeting of BrainConnects, Taguig City, Philippines.
- Fung H., Gan S.R., Gupta, B., Ho R.C., & Chen S.H.A. (2019, June). *An fMRI investigation of hot and cool executive functions in adults with ADHD*. Poster presented at the Annual Meeting of OHBM, Rome, Italy.

Fung H., Gan S.R., Lee S.H., Ho R.C., & Chen S.H.A. (2018, June). *An fMRI investigation of hot and cool executive functions in healthy adults*. Poster presented at the Annual Meeting of OHBM, Singapore.

Fung H. & Gilbert S. (2018, June). *Decoding intentions of self and others from fMRI activity patterns*. Poster presented at the Annual Meeting of OHBM, Singapore.

ACADEMIC SERVICE

Newsletter Editor	Society for Neuroscience, Singapore Chapter	Since 2021
Centre Representative	Society for Neuroscience, Singapore Chapter	Since 2020
Student Organizer	Organization of Human Brain Mapping Annual Meeting	June 2018
Student Organizer	The ICN 20th Anniversary Conference	June 2016

PROFESSIONAL MEMBERSHIPS & EXPERIENCES

Member	Society for Neuroscience, Singapore Chapter	Since 2019
Member	Psi Chi, Berkeley Undergraduate Chapter	Since 2014
Member	Phi Theta Kappa, Upsilon Zeta Chapter	Since 2012
Attendee	Organization of Human Brain Mapping Annual Meeting, Virtual	June 2020
Attendee	Cognitive Neuroscience Society Annual Meeting, Virtual	May 2020
Attendee	SfN Singapore Symposium, Singapore	Sep 2019
Attendee	NTU LKCMedicine Symposium, Singapore	Jan 2018
Attendee	UCL Neuroscience Symposium, London, UK	June 2016
Attendee	California Cognitive Science Conference (CCSC), USA	May 2015

SKILLS

Project Management	Grant application, IRB application, Scientific writing for annual reports, journal articles, and conference posters, Subject recruitment (online and offline)
Implementation	Experimental design (full pipeline inc. scanning protocol), Computerized and MR scanner compatible neuropsychological task programming, Data collection (inc. scanner operation)
Data Types	Survey, Neuropsychological, Behavioral, sMRI, Task-fMRI, rs-fMRI, DWI/DTI
Methods	Conventional statistics (hypothesis testing), Bayesian approach, Machine Learning, Deep Learning. Mass-univariate, multivariate (e.g. ICA, MVPA), functional connectivity, surface-based, and tract-based analyses
Research Stack	Python, R, Matlab, SQL, Bash, Git, LaTeX, Windows, Unix, HPC, SPM, FSL, FreeSurfer, SPSS, JASP, E-prime, Qualtrics, MTurk, Various libraries (e.g. CONN, PsychoPy, Keras, TensorFlow, PyTorch, Caret, ggplot, Matplotlib, Seaborn)
Languages	English, Cantonese, Mandarin