Curriculum Vitae

Name Chung-Chuan Lo (羅中泉)

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National Tsing Hua University
Hsinchu, 30013,
Taiwan

Education

1998-2004 **Boston University**, Boston, Massachusetts
Ph. D. in Physics
Thesis title: Statistical Physics Approaches for Understanding Sleep-Wake Transitions
Thesis advisor: H. Eugene Stanley, Professor of Physics

1995-1997 **National Taiwan University**, Taipei, Taiwan
M. S. in Physics
Thesis title: Study of the Effect of Site Mutation on the Structural Stability of Cobra Cardiotoxin by Time-Resolved Fluorescence
Thesis advisor: Wunshain Fann, Joint Assistant Professor of Physics.

1991-1995 **National Taiwan University**, Taipei, Taiwan
B. S. in Physics
Project title: The Effect of Noises on a Cascaded Lorenz System
Project advisor: Yih-Yuh Chen, Associate Professor of Physics.

Employment

2018-present **National Tsing Hua University**, Hsinchu, Taiwan
Professor & director, Institute of Systems Neuroscience

2014-2018 **National Tsing Hua University**, Hsinchu, Taiwan
Associate professor, Institute of Systems Neuroscience

2009-2014 **National Tsing Hua University**, Hsinchu, Taiwan
Assistant professor, Institute of Systems Neuroscience

2008-2009 **National Tsing Hua University**, Hsinchu, Taiwan
Assistant professor, Institute of Bioinformatics and Structural Biology

2006-2008 **Yale University**, New Haven, CT.
Postdoc assistant (Supervisor, Dr. Xiao-Jing Wang).
Neural network modeling

2004-2006 **Brandeis University**, Waltham, MA.
Postdoc fellow (Supervisor, Dr. Xiao-Jing Wang).
Neural network modeling

1997-1998 **Institute of Atomic and Molecular Sciences, Academia Sinica**, Taipei, Taiwan
Research Assistant (Supervisor, Dr. W.-S. Fann)
Experiments on time-resolved fluorescence of conformational changes in protein.

Honors and Awards

2017 Open Science Prize Finalist (team award)

2014 National Tsing Hua University Publication Award

2011	Best paper award. Symposium on Engineering, medicine and biology application, Taichung, Taiwan
2010	National Tsing Hua University Publication Award
2004-2007	Postdoctoral fellowship in computational neuroscience (Sloan-Swartz foundation)
2003	American Physical Society travel awards for Annual Meeting.
2001	Sigma Xi award, achievement in graduate research at Boston University.
2001	Travel scholarship for Sleep Medicine Conference, Marburg, Germany
1998-2003	Boston University Ph.D. research fellowship (2000-2003); teaching fellowship (1998-2000).
1991-1995	Ministry of Education (Taiwan) bachelor degree scholarship for outstanding students.

Professional Services

2012-present	Review editor of Frontiers in Decision Neuroscience
2011-present	Review editor of Frontiers in Neuroinformatics
2011-2012	Technical program committee for Symposium on Engineering, Medicine and Biology Applications & International workshop on Bio-inspired Systems and Prosthetic Devices (Feb 11-13, 2012, Taichung, Taiwan)
2009-2013	Member of the task force for the multi-scale modeling, International Neuroinformatics Coordinating Facility (INCF)

Academic Publications

(*corresponding author)

1. Yu-Chi Huang, Cheng-Te Wang, Ta-Shun Su, Kuo-Wei Kao, Yen-Jen Lin, Chao-Chun Chuang, Ann-Shyn Chiang and Chung-Chuan Lo* (2018). A Single-Cell Level and Connectome-Derived Computational Model of the Drosophila Brain. *Frontiers in Neuroinformatics* 12:99

2. Ta-Shun Su, Wan-Ju Lee, Yu-Chi Huang, Cheng-Te Wang and **Chung-Chuan Lo*** (2017). Coupled symmetric and asymmetric circuits underlying spatial orientation in fruit flies. *Nature Communications*. 8:139.

3. Po-Yen Chang, Ta-Shun Su, Chi-Tin Shih* and **Chung-Chuan Lo*** (2017). The Topographical Mapping in Drosophila Central Complex Network and its Signal Routing. *Frontiers in Neuroinformatics*. 11:26.

4. **Chung-Chuan Lo*** and Ann-Shyn Chiang* (2016). Toward Whole-Body Connectomics. *Journal of Neuroscience*. 36:11375-11383.

5. **Chung-Chuan Lo***, and Xiao-Jing Wang* (2016). Conflict Resolution as Near-Threshold Decision-Making: A Spiking Neural Circuit Model with Two-Stage Competition for Antisaccadic Task. *PLOS Computational Biology*. 12:e1005081.

6. Cheng-Wei Li, **Chung-Chuan Lo**, and Bor-Sen Chen* (2016). Estimating Sensorimotor Mapping From Stimuli to Behaviors to Infer C. Elegans Movements by Neural Transmission Ability Through Connectome Databases. *IEEE Transactions on Neural Networks and Learning Systems*. 27:2229 - 2241.

7. Cheng-Wei Li, **Chung-Chuan Lo**, and Bor-Sen Chen* (2015). Robust Sensorimotor Control of Human Arm Model under State-Dependent Noises, Control-Dependent Noises and Additive Noises. *Neurocomputing*. 167:61-75.

8. **Chung-Chuan Lo#** , Cheng-Te Wang and Xiao-Jing Wang*# (2015). Speed-accuracy tradeoff by a control signal with balanced excitation and inhibition. *Journal of Neurophysiology*. 114:650-661. (#: equal contribution)

9. Chi-Tin Shih*, Olaf Sporns, Shou-Li Yuan, Ta-Shun Su, Yen-Jen Lin, Chao-Chun Chuang, Ting-Yuan Wang, **Chung-Chuan Lo**, Ralph J. Greenspan, and Ann-Shyn Chiang* (2015). Connectomics-Based Analysis of Information Flow in the Drosophila Brain. *Current Biology*. 25:1-10

10. Yi-Hsuan Lee, Yen-Nan Lin, Chao-Chun Chuang and **Chung-Chuan Lo*** (2014). SPIN: A Method of Skeleton-based Polarity Identification for Neurons. *Neurinformatics*. 12:487.

11. Yen-Nan Lin, Po-Yen Chang, Pao-Yueh Hsiao and **Chung-Chuan Lo*** (2014). Polarity-specific high-level information propagation in neural networks. *Frontiers in Neuroinformatics*. 8:27.

12. Pao-Yueh Hsiao and **Chung-Chuan Lo*** (2013). A Plastic Cortico-Striatal Circuit Model of Adaptation in Perceptual Decision. *Frontiers in Computational Neuroscience*. 7:178.

13. **Chung-Chuan Lo**, Ronny P. Bartsch and Plamen Ch. Ivanov* (2013). Asymmetry and basic pathways in sleep-stage transitions. *EPL (Europhysics Letters)*. 102:10008.

14. Cheng-Te Wang, Chung-Ting Lee, Xiao-Jing Wang, **Chung-Chuan Lo*** (2013). Top-down modulation on perceptual decision by exogenous and endogenous balance of excitation and inhibition. *PLoS One*. 8:e62379.

15. Ying-Zu Huang, Chin-Song Lu, John C. Rothwell, **Chung-Chuan Lo**, Wen-Li Chuang, Yi-Hsin Weng, Szu-Chia Lai, Rou-Shayn Chen* (2012) Modulation of the disturbed motor network in dystonia by multisession suppression of premotor cortex. *PLoS One*. 7:e47574.

16. **Chung-Chuan Lo**, Leanne Boucher, Martin Pare, Jeffery D. Schall and Xiao-Jing Wang* (2009). Proactive inhibitory control and attractor dynamics in countermanding action: a spiking neural circuit model. *Journal of Neuroscience*. 29:9059-9071.

17. **Chung-Chuan Lo** and Xiao-Jing Wang* (2006). Cortico-basal ganglia circuit mechanism for a decision threshold in reaction time tasks. *Nature Neuroscience*. 9:957-963 (2006).

18. **Chung-Chuan Lo**, Thomas Chou, Thomas Penzel, Thomas E. Scammell, Robert E. Strecker, H. Eugene Stanley, and Plamen Ch. Ivanov* (2004). Common scale-invariant pattern of sleep-wake transitions across mammalian species. *Proceedings of the National Academy of Sciences of the United States of America*. 50:17545-17548

19. Thomas Penzel, Jan W. Kantelhardt, **Chung-Chuan Lo**, Karlheinz Voigt and Claus Vogelmeier* (2003). Dynamics of Heart Rate and Sleep Stages in Normals and Patients with Sleep Apnea. *Neuropsychopharmacology* 28:S48-S53

20. **Chung-Chuan Lo**, L. A. Nunes Amaral, S. Havlin, Plamen. Ch. Ivanov, Thomas Penzel, J.-H. Peter and H. Eugene Stanley* (2002). Dynamics of sleep-wake transitions during sleep. *EPL (Europhysics Letters)* 57:625-631.

21. Plamen. Ch. Ivanov* and **Chung-Chuan Lo** (2002). Stochastic Approaches to Modeling of Physiological Rhythms, in *Modeling Biomedical signals*, edit. G. Nardulli & S. Stramaglia. World Scientific.

22. **Chung-Chuan Lo**, Jui-Hung Hsu, You-Cheng Sheu, Chein-Min Chiang, Wen-guey Wu, Wunshain Fann* and Pei-Hsi Tsao (1998). Effect of D57N mutation on membrane activity and molecular unfolding of cobra cardiotoxin. *Biophysical Journal* 75: 2382-2388

Other Publications

1. 小腦袋大數據-大腦圖譜研究計畫 <科學月刊> 2018 三月號

Popular Articles and Journal Reviews About My Research

1. Gene Ng, 果蠅腦中的神經元，如何跟機械的指南車一樣可以指出固定方向？ published September 29, 2017. Inside (http://www.inside.com.tw/)
2. Benedicte Ballanger, Top-down control of saccades as part of a generalized model of proactive inhibitory control *Journal of Neurophysiology* published 26 August 2009, 10.1152/jn.00717.2009
3. Roozbeh Kiani, Timothy D Hanks & Michael N Shadlen. When is enough enough? *Nature Neuroscience* 9, 681-683 (2006).
4. Taylor McNeil, Bring on the Sandman. *Bostonia*. Summer 2002. (http://www.bu.edu/alumni/bostonia/2002/summer/explorations/sleep/index.html)
5. Michael Brooks, Feature: Snooze Control. *New Scientist* p. 173, 38-40, Feb. 23, 2002.
6. "Tired? Well, you woke up 35 times last night", *The Daily Mail*, p. 35, Feb. 21, 2002.
7. "Sleep well last night? You woke up 37 times", *The Mirror*, Feb. 21, 2002.
8. *Complex Digest* issue 51, Dec. 19 2001. (http://www.comdig.de/ComDig01-51/#12)