

Yiwen Wang Ph. D.

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Dept. of Electronic and Computer Engineering, Dept. of Chemical and Biological Engineering,
Hong Kong University of Science and Technology

EDUCATION:

Ph.D., University of Florida, USA, 2008.

B.S., M.S. with distinction, University of Science and Technology of China, China, 2001, 2004

FIELDS OF INTEREST

Brain Machine Interfaces, Neural Computation, Neuromorphic Engineering, Adaptive signal processing, Reinforcement Learning, Information Theoretical Learning

PROFESSIONAL EXPERIENCE

Assistant Professor, Dept. of Electronic and Computer Engineering, Dept. of Chemical and Biological Engineering, Hong Kong University of Science and Technology, Jan. 2017-present.

Associate Professor, Qiushi Academy of Advanced Studies, Zhejiang University, China, Apr. 2010-Dec. 2016

Research Associate, Dept. of Electronic & Computer Engineering, Hong Kong University of Science and Technology, Hong Kong, Jul. 2008~ Mar.2010

HONORS AND AWARDS

- **Student Paper Competition Award**, 3rd prize, IEEE EMBC HK-Macau joint chapter, 2021
- **Best Student Paper Award**, 2nd Place, 10th Workshop on Brain-Machine Interface (BMI) Systems, IEEE Systems, Man, and Cybernetics Society annual meeting, 2020
- **Student Paper Competition Award**, 3rd prize, IEEE EMBC HK-Macau joint chapter, 2019
- **Wu Wen Jun AI Science & Technology Innovation Award, first prize**, Chinese Association for Artificial Intelligence, 2016
- **Lim Por Yen Science & High Technology Scholarship**, 2nd prize, Hong Kong Lim Por Yen Foundation, 2012
- **Distinguished Young Scholarship**, Zhejiang University, 2011-2015

PROFESSIONAL ACTIVITIES

- **Board and Technical Committee service**: Chair of IEEE Brain Publications Subcommittee, IEEE BRAIN (2021-); Chair, IEEE EMBS Neural Engineering Technical Committee (2022-); Board Member, Brain Computer Interfaces Society, (2020-); Technical Committee, IEEE EMBS Neural Engineering (2015-); Executive Committee, IEEE EMBS Hong Kong-Macau Joint Chapter (2018-); Editor-in-Chief Search Committee, IEEE TNSRE (2017)
- **Editorial activity**: Editor-in-Chief, IEEE BRAIN newsletter (2021-) Associate Editor, IEEE Transactions on Neural Systems and Rehabilitation Engineering (2015-2021); Associate Editor, IEEE Transactions on Cognitive and Developmental Systems (2021-), Associate Editor, the Frontiers in Human Neuroscience (Brain-Computer Interfaces) (2021-); Editorial Board, Journal of Neural Engineering (2019-);
- **Event Chair/Leading Organizer**: one international face-to-face workshop (50+ participants); one 2-week virtual IEEE summer school (100+ applicants); one virtual international workshop (90+ participants, 5000+ cumulative viewership). Organized invited sessions at international conferences (7). International conference session (10), program committee membership (10), Judging panel (5).

INVITED TALKS (10 selected talks)

1. **Invited Webinar Speaker**, Autonomous Task Learning for Motor Brain Machine Interfaces, Waterloo International Workshop on Neural Engineering and Rehabilitation, University of Waterloo, IEEE brain Initiative, Jul 7-10, 2021
2. **Invited Speaker**, Building Motor Brain Machine Interfaces towards a Smart Learner, Annual conference of Society for Brain Mapping and Therapeutics (SBMT), LA Convention Center, California, March 20-22, 2021
3. **Keynote Speaker**, Building Motor Brain Machine Interfaces towards a Smart Learner, the 3rd International Conference on Translational Research in Brain Stimulation 2020, Virtual online, Dec. 12-13, 2020
4. **Theme Keynote Speaker**, Building the Autonomous Motor Brain Machine Interfaces, the 3rd China Symposium on Cognitive Computing and Hybrid Intelligence, Virtual online, Oct 17-18, 2020
5. **Invited Speaker**, Brain machine interfaces – the era of avatar, Smart aging seminar, Science for Lunch, Hong Kong University of Science and Technology, Hong Kong, Mar 14, 2019
6. **Invited Speaker**, Tracking Neural Plasticity for Brain Machine Interfaces, NSFC-RGC Young Scholars Forum: Flexible Electronics and Digital Healthcare, Hangzhou, China, Dec. 22, 2018
7. **Invited Speaker**, Tracking Neural Plasticity for Brain Machine Interfaces, Scientific symposium on "Big Data Challenges for Predictive Modeling of Complex Systems", University of Hong Kong, University of Notre Dame, Hong Kong, Nov. 26, 2018
8. **Invited Key Note Speaker**, An Introduction to Invasive Motor Brain Machine Interfaces in Primates, the 4th International Conference of Bionic Engineering, Nanjing, China, 2013
9. **Invited Educational Course Speaker**, Invasive Motor Brain Machine Interfaces in Primates, Organization for Human Brain Mapping Annual Meeting, Beijing, China, 2012
10. **Tutorial-Talk Speaker**, Information Theoretic Learning and Kernel Methods, IEEE World Congress on Computational Intelligence, Hong Kong, 2008

PUBLICATIONS (the 5 representative publications)

Totally 4 book chapters, 47 journal papers, and 60 conference papers

- 1) S. Chen, X. Zhang, X. Shen, Y. Huang, **Yiwen Wang***, Tracking Fast Neural Adaptation by Globally Adaptive Point Process Estimation for Brain-Machine Interface, *IEEE Transactions on Neural Systems & Rehabilitation Engineering*, 2021, 29:1690-1700
- 2) X. Shen, X. Zhang, S. Chen, Y. Huang and **Yiwen Wang***, Task Learning over Multi-Day Recording via Internally Rewarded Reinforcement Learning based Brain-machine Interfaces, *IEEE Transactions on Neural Systems & Rehabilitation Engineering*, 2020, 28(12):3089-3099
- 3) X. Zhang, C. Libedinsky, R. So, J. Principe, **Yiwen Wang***, Clustering Neural Patterns in Kernel Reinforcement Learning Assists Fast Brain Control in Brain-Machine Interfaces, *IEEE Transactions on Neural Systems & Rehabilitation Engineering (cover page article)*, 2019 27(9): 1684-1694
- 4) **Yiwen Wang***, X. She, et al., Tracking Neural Tuning Plasticity by Dual Sequential Monte Carlo Estimation on Point Processes for Brain Machine Interfaces, *IEEE Transactions on Biomedical Engineering, (cover page article)*, 63(8): 1728-1741, 2016
- 5) **Yiwen Wang***, F. Wang, K. Xu, Q. Zhang, S. Zhang, X. Zheng, Neural Control of a Tracking Task via Attention-gated Reinforcement Learning for Brain-Machine Interfaces, *IEEE Transactions on Neural Systems & Rehabilitation Engineering, (Cover page article)*, 2015, 23(3): 458