Fu-Yin Cherng

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PROFESSIONAl SUMMARY

Fu-Yin is a postdoctoral researcher who works with Prof. Hao-Chuan Wang in the computer science department at UC Davis. She received a Ph.D. degree from the department of computer science department at National Chiao Tung University (NCTU), Taiwan, in 2019. She was supervised by Prof. Wen-Chieh Lin in NCTU. From 2016 to 2017, Fu-Yin was a doctoral research assistant at École Polytechnique Fédérale de Lausanne (EPFL) in Switzerland. Fu-Yin's general research interest is Human-computer Interaction, focusing on identifying users' cognitive processes with physiological indicators. She has also worked on understanding users' behaviors and derived design suggestions using data science techniques. She has published several papers, including two award-winning papers within five years at top-tier conferences and journals with over a hundred citations from other researchers. As an active researcher, she served as a committee member in MobileHCI'19 and reviewer.

RESEARCH INTEREST

Human-Computer Interaction, Data-Driven Design, Brain-Computer Interface, Neuroergonomics, Learning Analytics, Data Science

EDUCATION

Ph.D. in Computer Science 2014 – 2019
National Chiao Tung University, Advisor: Prof. Wen-Chieh Lin
• Thesis: Understanding the Usability of Audio Notifications and Graphic Icons by EEG-based Approach and Large-scale Online Studies
• Committee: Prof. Ming Ouhyoung, Prof. I-Ping Chen, Prof. Bing-Yu Chen, Prof. Yuan-Chi Tseng, Dr. Jung-Tai King, Prof. Yung-Ju Chang, and Prof. Min-Chun Hu

M.S. Student in Computer Science 2013 – 2014
National Chiao Tung University, Advisor: Prof. Wen-Chieh Lin

B.S. in Computer Science 2009 – 2013
National Chiao Tung University

EMPLOYMENT HISTORY

University of California, Davis / Postdoctoral Researcher 2019 – present
Mentor: Prof. Hao-Chuan Wang
• Conducted research projects to discover the effect of social information on customers preference using survey and behavior experiments
• Participated in writing proposals with national and industrial grants with multidisciplinary teams to design research plans

École Polytechnique Fédérale de Lausanne / Doctoral Assistant 2016 – 2017
Mentor: Prof. Pierre Dillenbourg, and Prof. Robert West
• Conducted research projects funded by the Swiss government to understand the evolution of the IT labor market by analyzing job titles and skills from 600k job ads collected (Open Source on GitHub)
• Conducted exploratory analysis to reveal what computational skills are important for the current and future labor market based on job ads and online forums

National Chiao Tung University / Research Assistant 2013 – 2019
Mentor: Prof. Wen-Chieh Lin
• Built website to deploy usability experiments to access users reactions and perceptions at large scale in the Amazon Mechanical Turk (Open Dataset on GitHub)
• Constructed pipeline using Python, R, and Matlab on physiological and self-report data to understand and predict users perceptions
• Derived actionable guidelines for designers to create notifications tailored users cognitive status by using quantitative and qualitative methods

PUBLICATIONS **Refereed Conference & Journal Publications**

1. Xun-Yi Huang, **Fu-Yin Cherng**, Jung-Tai King, Wen-Chieh Lin. EEG-based Measures of Auditory Saliency in a Complex Context. Proceedings of the 21st International Conference on Human-Computer Interaction with Mobile Devices and Services, 2019

2. **Fu-Yin Cherng**, Yi-Chen Lee, Jung-Tai King, Wen-Chieh Lin. Fu-Yin Cherng, Yi-Chen Lee, Jung-Tai King, Wen-Chieh Lin. Measuring the Influences of Musical Parameters on Cognitive and Behavioral Responses to Audio Notifications Using EEG and Large-scale Online Studies. Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems

3. Yi-Chen Lee, **Fu-Yin Cherng**, Jung-Tai King, Wen-Chieh Lin. To Repeat or Not to Repeat?: Redesigning Repeating Auditory Alarms Based on EEG Analysis. Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems

4. Ching-Ying Sung, Xun-Yi Huang, Yicong Shen, **Fu-Yin Cherng**, Wen-Chieh Lin, and Hao-Chuan Wang. Exploring online learners interactive dynamics by visually analyzing their time-anchored comments. Computer Graphics Forum, volume 36, pages 145155. Wiley Online Library, 2017.

5. **Fu-Yin Cherng**, Wen-Chieh Lin, Jung-Tai King, Yi-Chen Lee. An EEG-based Approach for Evaluating Graphic Icons from the Perspective of Semantic Distance. Proceedings of the 2016 CHI conference on human factors in computing systems **(Best Paper Honorable Mention Award, 4 % of over 2,000 submitted papers)**

6. Yi-Chieh Lee, Wen-Chieh Lin, **Fu-Yin Cherng**, Li-Wei Ko. A visual attention monitor based on steady-state visual evoked potential. IEEE Transactions on neural systems and rehabilitation engineering, 2015, 24.3: 399-408

7. Yi-Chieh Lee, Wen-Chieh Lin, **Fu-Yin Cherng**, Hao-Chuan Wang, Ching-Ying Sung, Jung-Tai King. Using Time-Anchored Peer Commenting to Enhance Social Interaction in Online Educational Videos. Proceedings of the 2015 CHI conference on human factors in computing systems

8. Sheng-Fu Liang, Chin-En Kuo, Yi-Chieh Lee, Wen-Chieh Lin, Yen-Chen Liu, Peng-Yu Chen, **Fu-Yin Cherng**, Fu-Zen Shaw. Development of an EOG-based automatic sleep-monitoring eye mask. IEEE Transactions on Instrumentation and Measurement, 2015, 64.11: 2977-2985

9. HsinYang Ho, ICheng Yeh, YuChi Lai, WenChieh Lin, **FuYin Cherng**. Evaluating 2D flow visualization using eye tracking. Computer Graphics Forum, volume 34, pages 501510. Wiley Online Library, 2015

10. Yi-Chieh Lee, Wen-Chieh Lin, Jung-Tai King, Li-Wei Ko, Yu-Ting Huang, **Fu-Yin Cherng**. An EEG-based approach for evaluating audio notifications under ambient sounds. Proceedings of the 2014 CHI conference on human factors in computing systems **(Best Paper Honorable Mention Award, 5 % of over 2,000 submitted papers)**

11. Chih-En Kuo, Sheng-Fu Liang, Yi-Chieh Lee, **Fu-Yin Cherng**, Wen-Chieh Lin, Peng-Yu Chen, Yen-Chen Liu, Fu-Zen Shaw. An EOG-based automatic sleep scoring system and its related application in sleep environmental control. International Conference on Physiological Computing Systems, 2014

12. Yi-Chieh Lee, Wen-Chieh Lin, Li-Wei Ko, **Fu-Yin Cherng**, Pei-Hua Huang, Yu-Ting Huang, Xun-Yi Huang. Seeing What Your Brain Sees: A Visual Attention Monitor Based on Steady-state Visually Evoked Potential. Proceedings of the International Symposium of Chinese CHI. ACM Press, 2014.

13. Chih-En Kuo, Sheng-Fu Liang, Yi-Chieh Lee, **Fu-Yin Cherng**, Wen-Chieh Lin, Peng-Yu Chen. An EOG-based Sleep Monitoring System and Its Application on Online Sleep-Stage Sensitive Light Control. Proceedings of the International Conference on Physiological Computing Systems, 2014.

Poster & Workshop Papers

1. Meng-Yun Liao, Ching-Ying Sung, Hao-Chuan Wang, Wen-Chieh Lin, **Fu-Yin Cherng**. Embodying Historical Learners' Messages as Learning Companions in a VR Classroom. Extended Abstracts of the 2019 CHI Conference on Human Factors in Computing Systems

2. **Fu-Yin Cherng**, Wen-Chieh Lin, Jung-Tai King, and Yi-Chen Lee. Understanding the influence of musical parameters on cognitive responses of audio notifications. Extended Abstracts of the 2018 CHI Conference on Human Factors in Computing Systems

3. Ching-Ying Sung, Xun-Yi Huang, Yicong Shen, **Fu-Yin Cherng**, Wen-Chieh Lin, and Hao-Chuan Wang. Topin: A visual analysis tool for time-anchored comments in online educational videos. Extended Abstracts of the 2016 CHI Conference on Human Factors in Computing Systems

HONORS & AWARDS

2020 Honorary Member of Phi Tau Phi, National Chiao Tung University
2016 ACM CHI Best Paper Honorable Mentioned Award
2016 Doctoral Fellowship (51,100 CHF), EPFL
2014 ACM CHI Best Paper Honorable Mentioned Award

SERVICE

Program Committee Member
- Student Volunteer Chair, MobileHCI, 2019
- Associate Chair of Late Breaking Results, MobileHCI, 2019

Reviewing
- ACM CHI, Human Factors in Computing Systems
- ACM CSCW, Computer-Supported Cooperative Work & Social Computing
- IEEE VR, Virtual Reality and 3D User Interfaces
- IEEE Access, The Multidisciplinary Open Access Journal
- ACM Transactions on Multimedia Computing Communications and Applications
- Pacific Conference on Computer Graphics and Applications

INVITED TALKS

- "Applying Brain-Computer Interfaces to Evaluation of Graphic Icons and Auditory Icons Design. Taiwan Society of Cognitive Neuroscience Annual Meeting, National Chiao Tung University, Jan. 2019 (talk info.)
- "Sharing Experience of Studying Ph.D. and Life of Research Seminar - Computer Science and Engineering, National Chiao Tung University, May 2015 (talk info.)

MENTORING EXPERIENCE

Yinhao Jiang, Master Student in Computer Science, UC Davis, 2019
Timothé Lottaz, Master Student in Computer Science, EPFL, 2017
Khalil Mrini, Bacholar Student in Computer Science, EPFL, 2016
Yi-Chen Lee, Master Student in Computer Science, NCTU, 2016-2019

RELEVANT COURSEWORK

École Polytechnique Fédérale de Lausanne (EPFL)
- Digital education & learning analytics, CS-411, Prof. Pierre Dillenbourg, Dr. Patrick Jermann, Prof. Thanasis Hadzilakos & Dr. Stian Haklev
- Topics in Computational Social Science, CS-727, Prof. Robert West
- Performance Evaluation, COM-503, Prof. Jean-Yves Le Boudec

National Chiao Tung University
- Social Computing, CS5441, Prof. Hao-Chuan Wang
- Big Data Analytics, CS5953, Prof. Vincent S. Tseng
- Cognitive Neuroscience, IED5174, Prof. Hon Wah LEE