Fu-Yin Cherng

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RESEARCH INTEREST

Human-Computer Interaction, Brain-Computer Interface, Neuroergonomics, Technology-Supported Learning

EDUCATION

Ph.D. in Computer Science 2013 – 2019
National Chiao Tung University, Advisor: Prof. Wen-Chieh Lin

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

EMPLOYMENT HISTORY

National Chung Cheng University / Assistant Professor 2021 - present
Computer Science and Information Engineering Dept.

National Taiwan University / Postdoctoral Researcher 2020 – 2021
Advisor: Prof. Bing-Yu Chen; Information Management Dept.
• Conducted exploratory study of developing and evaluating child-friendly programming environments with concretized computational concepts
• Participated in industrial-granted projects of NTU IoX center with Delta Electronics to develop mixed-reality system for remote meeting and training

University of California, Davis / Postdoctoral Researcher 2019 – 2020
Advisor: Prof. Hao-Chuan Wang; Computer Sciences Dept.
• 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
Advisor: Prof. Pierre Dillenbourg and Prof. Robert West; Computer and Communication Sciences Dept.
• 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
Advisor: Prof. Wen-Chieh Lin; Computer Science Dept.
• 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

International Journal

I-Chao Shen, **Fu-Yin Cherng**, Takeo Igarashi, Wen-Chieh Lin, Bing-Yu Chen. EvIcon: Designing High-Usability Icon with Human-in-the-loop Exploration and IconCLIP. Computer Graphics Forum, 2023 (SCI).

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 (SCI).

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, (SCI).

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, (SCI).

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, (SCI).

International Refereed Conference

Jingxian Liao, **Fu-Yin Cherng**, Mrinalini Singh, Hao-Chuan Wang. 2025. Signals Beyond Text: Understanding How Accessing Peer Concept Mapping and Commenting Augments Reflective Mind for High-Stake Videos. Proceedings of ACM Conference on Human Factors in Computing Systems, CHI'25. ACM (acceptance rate: 24.9%).

Yun-Rou Lin, **Fu-Yin Cherng**, Yi-Chieh Lee, Zhu-Ying Tian, Wen-Chieh Lin. Navigating Color Constraints in Multi-View Visualizations with MVcolor. IEEE PacificVis 2025 (Conference Papers Track)

Ping (Hank) Lee, Wei-Lun Kao, Hung-Jui Wang, Ruei-Che Chang, Yi-Hao Peng, **Fu-Yin Cherng**, Shang-Tse Chen. AdvCAPTCHA: Creating Usable and Secure Audio CAPTCHA with Adversarial Machine Learning. Symposium on Usable Security and Privacy (USEC) 2024.

Chung, Yu-Jung, Chen-Wei Hsu, Meng-Hsun Chan, and **Fu-Yin Cherng***. Enhancing ESL Learners Experience and Performance through Gradual Adjustment of Video Speed during Extensive Viewing. Proceedings of the SIGCHI Conference on Human Factors in Computing Systems. CHI '24 ACM (acceptance rate: 26.4%).

Yu-Jung Chung, Bei-Hong Lin, Hao-Yuan Cheng, Yu-Ting Yen, Ching-Chuan Li, **Fu-Yin Cherng***. Understanding the Effects of Short-Form Videos on Sustained Attention. In Extended Abstracts of the 2024 CHI Conference on Human Factors in Computing Systems, CHI'24. ACM.

Ching-Ying Sung, **Fu-Yin Cherng***, Yi-Lun Chiu, Peng-Hsi Chen, Bing-Yu Chen. 3CPEs: Concrete Computational Concepts Programming Environments for Elementary Computer Science Education. In Extended Abstracts of the 2024 CHI Conference on Human Factors in Computing Systems, CHI'24. ACM.

Fu-Yin Cherng*, Jingchao Fang, Jiang, Yinhao Jiang, Xin Chen, Taejun Choi, Hao-Chuan Wang. Understanding Social Influence in Collective Product Ratings Using Behavioral and Cognitive Metrics. Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems, CHI'22. ACM (acceptance rate: 25%).

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, MobileHCI'19. ACM (acceptance rate: 26.4%).

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, CHI'19. ACM (acceptance rate: 23.8%).

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, CHI'19. ACM (acceptance rate: 23.8%).

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, CHI'16. ACM **(acceptance rate: 23%; Best Paper Honorable Mention Award, 4 % of over 2,000 submitted papers)**

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, CHI'15. ACM (acceptance rate: 25%).

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, CHI'14. ACM **(acceptance rate: 26.7%; Best Paper Honorable Mention Award, 5 % of over 2,000 submitted papers)**

International Poster & Workshop Papers

Yu-Jung Chung, Chen-Wei Hsu, Meng-Hsun Chan, **Fu-Yin Cherng**. Enhancing ESL Learners Experience and Performance through Gradual Adjustment of Video Speed during Extensive Viewing. Extended Abstracts of the 2023 CHI Conference on Human Factors in Computing Systems, CHI'23. ACM.

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, CHI'19. ACM.

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, CHI'18. ACM.

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, CHI'16. ACM.

SERVICE

Program Committee Member

- ACM SIGCHI Best Practice Working Group, 2023
- Late-Breaking Work (LBW) Program Committee, CHI 2023, 2024
- Paper Chair, TAICHI, 2024
- Poster Chair, TAICHI, 2021, 2022, 2023
- Student Volunteer Chair, MobileHCI, 2019
- Late-Breaking Work (LBW) Program Committee, MobileHCI, 2019

Reviewing

- ACM CHI, Human Factors in Computing Systems
- ACM CSCW, Computer-Supported Cooperative Work & Social Computing
- ACM SIGGRAPH Asia
- ACM TOMM, Tran. on Multimedia Computing Communications and Applications
- ACM MobileHCI, International Conference on Mobile Human-Computer Interaction
- IJHCS, International Journal of Human-Computer Studies
- IEEE VR, Virtual Reality and 3D User Interfaces

- IEEE Access, The Multidisciplinary Open Access Journal
- PG, Pacific Conference on Computer Graphics and Applications
- Journal of Information Science