Yi-Chi Liao

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EDUCATION

Aalto University, Helsinki, Finland

- Ph.D. in Communications and Networking, School of Electrical Engineering — May 2018 –
  - Adviser: Dr. Antti Oulasvirta
  - Focus: Computational Interaction, Simulation-based Optimization, Designing Interaction Techniques.

National Taiwan University, Taipei City, Taiwan

- M.B.A. in Information Management — Sep 2014 – Jun 2017
  - Focus: Human–Computer Interaction, Haptic Interface.
  - Thesis: Effective Character Output Using a Wrist-Worn Tactile Display
  - Advisor: Dr. Bing-Yu Chen and Dr. Liwei Chan.
- B.B.A. in Information Management — Sep 2010 – Jun 2014

PUBLICATIONS

CONFERENCES

[1] Yi-Chi Liao, Kashyap Todi, Aditya Acharya, Antti Keurulainen, Andrew Howes, and Antti Oulasvirta, "Rediscovering Affordance: A Reinforcement Learning Perspective," in *Proceedings of the CHI 2022*, New Orleans, Louisiana, Apr 2022. (Direct acceptance rate = 12.5%)

[2] Liwei Chan, Yi-Chi Liao, George B. Mo, John J. Dudley, Chun-Lien Cheng, Per Ola Kristensson, and Antti Oulasvirta, "Investigating Positive and Negative Qualities of Human-in-the-Loop Optimization for Designing Interaction Techniques," in *Proceedings of the CHI 2022*, New Orleans, Louisiana, Apr 2022. (Direct acceptance rate = 12.5%). **Honorable Mention Award**.

[3] Yi-Chi Liao, "Computational Workflows for Designing Input Devices," in *Proceedings of the CHI 2021 Adjunct*, Yokohama, Japan, May 2021. (Acceptance rate = 21.7%)

[4] Yi-Chi Liao, Sunjun Kim, Byungjoo Lee, and Antti Oulasvirta, "Button Simulation and Design via FDVV Models," in *Proceedings of the CHI 2020*, Honolulu, HI, May 2020. (Acceptance rate = 24.3%)

[5] Yi-Chi Liao, Sunjun Kim, Byungjoo Lee, and Antti Oulasvirta, "Press'Em: Simulating Varying Button Tactility via FDVV Models," in *Proceedings of the CHI 2020 Adjunct*, Honolulu, HI, May 2020.

[6] Yi-Chi Liao, Sunjun Kim, and Antti Oulasvirta, "One Button to Rule Them All: Rendering Arbitrary Force-Displacement Curves," in *Proceedings of the UIST'18 Adjunct*, Berlin, Germany, Oct 2018.

[7] Yi-Chi Liao, Yen-Chiu Chen, Liwei Chan, and Bing-Yu Chen, "Dwell+: Multi-Level Mode Selection Using Vibrotactile Cues," in *Proceedings of the UIST'17*, Québec City, QC, Canada, Oct 2017. (Acceptance rate = 22%)

[8] Yung-Ta Lin, Yi-Chi Liao, Shan-Yuan Teng, Yi-Ju Chung, Liwei Chan, and Bing-Yu Chen, "Outside-In: Visualizing Out-of-Sight Regions-of-Interest in a 360° Video Using Spatial Picture-in-Picture Previews," in *Proceedings of the UIST'17*, Québec City, QC, Canada, Oct 2017. (Acceptance rate = 22%)

[9] Yi-Chi Liao, Yi-Ling Chen, Jo-Yu Lo, Rong-Hao Liang, Liwei Chan, and Bing-Yu Chen, "EdgeVib: Effective Alphanumeric Character Output Using a Wrist-Worn Tactile Display," in *Proceedings of the UIST'16*, Tokyo, Japan, Oct 2016. (Acceptance rate = 20%)

[10] Yi-Chi Liao, Shun-Yao Yang, Rong-Hao Liang, Liwei Chan, and Bing-Yu Chen, "ThirdHand: wearing a robotic arm to experience rich force feedback," in *Proceedings of the Siggraph Asia'15 Emerging Techonology*, Kobe, Japan, Nov 2015. (Acceptance rate = 30%)

[11] Chin-Yu Chien, Cheng-Yuan Li, Liwei Chan, Yi-Chi Liao, Rong-Hao Liang, Hao-Hua Chu, and Bing-Yu Chen, "fStrip: a malleable shape-retaining wearable strip for interface on-demand," in *Proceedings of the UbiComp/ISWC'15 Adjunct*, Osaka, Japan, Sep 2015.

AWARDS, SCHOLARSHIPS & EXPERIENCES

- ACM CHI '21 Doctoral Consortium — May 2021
  - Topic: Computational Workflows for Designing Input Devices
  - 10 doctoral candidates were accepted out of 46 submissions.

- Special Recognitions for Outstanding Reviews
  - 3 x recognitions for CHI 2021 Papers
  - 1 x recognitions for CHI 2020 Papers
- Best Implementation Award, Student Innovation Competition, UIST'16. Oct 2016
  EMS Air Guitar, US$ 1,000 award.
- Best Award & Most Innovative Award, HackNTU 2014. Jun 2014
  Interactive chair for detecting sitting posture, US$ 1,000 award.
- Academic Achievement Awards, National Taiwan University, 2014. Jun 2014
  NT$ 2,000 award for GPA in top 5% of the students in a class of 48 students.

PROFESSIONAL ACTIVITIES

- Organization Chair.
  - Video Preview Chair, ACM CHI 2022.
  - Student Volunteer Chair, ACM IUI 2022.
- Paper Session Chair.
  - ACM UIST 2021 (Touch and Other Input Methods).
  - ACM IUI 2022 (Mobiles and Wearables).
  - ACM CHI 2022 (Intelligent Interaction Techniques).
- Program Associate Chair.
  - Late-Breaking Works, ACM CHI 2021, 2022.
  - Work-in-Progress, ACM TEI 2021.
- Paper Reviewing.
  - CHI 2016 - 2022.
  - IEEE Transactions on Haptics 2019, 2021.
  - International Journal of Human-Computer Studies 2021.
  - IEEE Haptics Symposium 2020.
  - DIS 2020, MobileHCI 2017 - 2020, UbiComp/ISWC 2017, TEI 2017 - 2018, Augmented Human 2017.
- Teaching. Sep 2019 –
  - *Bayesian Optimization* on Computational User Interface Design Course, 2021.
  - *Deep Learning* on Computational User Interface Design Course, 2020.
  - *Bayesian Statistics and Probabilistic Programming* on User Research Course, 2020.
  - *Probabilistic Decoding* on Engineering for Humans Course, 2020.
  - *Input Sesning and Data Processing* on Computational User Interface Design Course, 2019.
- Teaching Assistant at Aalto University. Apr 2019 – Jun 2019
  - Engineering for Humans by Prof. Antti Oulasvirta.
- Teaching Assistant at National Taiwan University. Sep 2014 – Jun 2017
  - Introduction to HCI by Prof. Bing-Yu Chen.
  - Computer Architecture by Prof. Bing-Yu Chen.
- Student Volunteer for International Conference.
  - Siggraph Asia 2016.
- Software Engineer at Deloitte, Taiwan. Sep 2014 – Feb 2015
  - Implementing information management systems.

SKILLS & EXPERIENCES

- Reinforcement Learning and Robotics.
  - Robotic simulation using Mujoco-py (publication [1]).
  - Implement the state-of-the-art algorithms (e.g., DQN, DDPG, PPO, SAC) in OpenAI Gym.
- Bayesian Optimization and other Optimization Techniques.
  - Apply multi-objective Bayesian optimization and other optimization algorithms to design problems (publication [2]).
- Deep Learning and Computer Vision.
  - Deep learning using Pytorch and Keras on a series of Computer Vision problems.
- Digital Fabrication and Modeling Dynamic Systems.
  - Arduino and other microprocessors.
  - Build 3D models, 3D printing, and laser cutting.
  - Work with sensors and OptiTrack. Data processing and feature engineering.
- User Interface Analysis and Design.
  - Bayesian Statistics and Probabilistic Programming.
  - Usability testing. Both quantitative, qualitative data analysis.