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, Bayesian Optimization, Meta-RL, Input Devices, Haptic Interface.

National Taiwan University, Taipei City, Taiwan

- M.B.A. in Information Management   Sep 2014 – Jun 2017
  - Focus: HCI, 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] <u>Yi-Chi Liao</u>, Sunjun Kim, Byungjoo Lee and Antti Oulasvirta, "Button Simulation and Design via FDVV Models," in *Proceedings of the CHI 2020*, Honolulu, HI, May 2020.

[2] <u>Yi-Chi Liao</u>, 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.

[3] <u>Yi-Chi Liao</u>, 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.

[4] <u>Yi-Chi Liao</u>, 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.

[5] Yung-Ta Lin, <u>Yi-Chi Liao</u>, 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.

[6] <u>Yi-Chi Liao</u>, 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.

[7] <u>Yi-Chi Liao</u>, 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.

[8] Chin-Yu Chien, Cheng-Yuan Li, Liwei Chan, <u>Yi-Chi Liao</u>, 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

- 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

- Paper Reviewing.
  - IEEE Haptics Symposium 2020.
  - IEEE Transactions on Haptics 2019.
  - CHI 2016 - 2021.
  - MobileHCI 2017 - 2020, UbiComp/ISWC 2017, TEI 2017 - 2018, Augmented Human 2017, DIS 2020.
- Teaching.   Sep 2019 –
  - *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

- Bayesian and other Multi-Objective Optimization Algorithms.
  - Applying multi-objective Bayesian optimization on interface design.
  - Applying several multi-objective black-box algorithms (genetic algorithms, annealing, multi-arm bandits) on Gaussian-process user models.

- Reinforcement Learning.
  - Robotic simulation using Mujoco-py.
  - Implementing state-of-the-art algorithms (e.g., DQN, DDPG, PPO, SAC) in OpenAI Gym.
  - Implementing Meta-RL (Proximal Meta-Policy) for a fast-adaptive robotic manipulation task.

- Deep Learning and Computer Vision.
  - Deep learning using Pytorch and Keras.
  - Affordance detection with transfer learning.

- Digital Fabrication and Modeling Dynamic Systems.
  - Arduino and other microprocessors.
  - 3D Modeling & printing, laser cutting.
  - Circuits and soldering.
  - Reality-based modeling on physical phenomena (via sensors and OptiTrack).
  - Data processing and feature engineering.

- User Interface Analysis and Design.
  - Bayesian Statistics and Probabilistic Programming.
  - Usability testing.
  - Quantitative and qualitative analysis.