

# Vincent W.-S. Tseng

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## EDUCATION

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**PhD in Information Science**, Cornell University, NY, USA

August 2014 — present

Advisor: Tanzeem Choudhury

Concentrations: Human Computer Interaction (HCI), Information Systems

Minor: Computer Science

**B.S. in Electrical Engineering**, National Taiwan University, Taipei, Taiwan

2009 — 2013

GPA: 3.8/4.0

## SKILLS

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### Programming Languages:

Python, Java, C++, C, Android, Objective-C, Swift, Matlab, R

### Methods:

Machine Learning, Rapid Prototyping, Longitudinal Study, Statistical Analysis

## RELEVANT COURSEWORK

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Machine Learning, Bayesian Machine Learning, Rapid Prototyping, Human-centered Design Methods, Statistical Methods, Behavioral and Information Technology

## PATENT

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**Wen-Sheng Tseng**, Sourav Bhattacharya and Nicholas Lane. A system for training binary network that accelerates runtime inferencing and optimizing accuracy based on device resource constraints. PCT/EP2017/083005, filed December 15, 2017. Patent Pending.

## WORK EXPERIENCE

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**Research Intern**, FX Palo Alto Laboratory, CA, USA

June 2018 — August 2018

*Mentor:* Matthew Lee and Daniel Avrahami

*Role:* Designed and built a conversational website-blocking system to help people transition from break to work. Conducted an in-the-wild user study to evaluate the effectiveness of the system.

**Research Intern**, Bell Labs, Cambridge, UK

June 2017 — September 2017

*Mentor:* Sourav Bhattacharya and Nicholas Lane

*Role:* Designed binary neural network architectures that have low memory and compute footprint.

Proposed an architecture where the filters in the architecture can be generated on-the-fly using a set of deterministic binary filters and only the coefficients need to be stored in the memory.

**Research Assistant**, Multimedia and Machine Learning Lab, Academia Sinica, Taiwan

2012 — 2013

*Mentor:* Yu-Chiang Frank Wang

*Role:* Studied domain adaptation for cross-view image recognition where the test images and training images are taken from different angles. Proposed a low-rank based model that can map images taken from different views into the same domain and meanwhile add structural incoherence between the transformed images of different categories to achieve better recognition accuracy.

## TEACHING EXPERIENCE

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**Info 4120/6120: Ubiquitous Computing**, Cornell University

January 2018 — December 2018

*Role:* Giving lectures on techniques for building ubiquitous computing systems, including mobile programming, hardware prototyping, machine learning, computer vision, and study design. Designing lab sessions to enable students to apply the techniques to their final projects.

**Consultant**, System Engineering, Cornell University

August 2016 — January 2017

*Role:* Advised master students in the department of system engineering on building health-sensing and health-care systems.

## PUBLICATIONS

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### Journal Articles:

- J03 Dror Ben-Zeev, Rachel Brian, Rui Wang, Weichen Wang, Andrew T. Campbell, Min S. H. Aung, Michael Merrill, **Vincent W.-S. Tseng**, Tanzeem Choudhury, Marta Hauser, John M. Kane, Emily A. Scherer. "CrossCheck: Integrating Self-Report, Behavioral Sensing, and Smartphone Use to Identify Digital Indicators of Psychotic Relapse." *Psychiatric Rehabilitation Journal*. 2017 Apr 3. doi: 10.1037/prj0000243.
- J02 Gillian M. Sandstrom, **Vincent W.-S. Tseng**, Jean Costa, Fabian Okeke, Tanzeem Choudhury, Elizabeth W. Dunn. "Talking Less during Social Interactions Predicts Enjoyment: A Mobile Sensing Pilot Study." *PLoS ONE* 11(7): e0158834. doi: 10.1371/journal.pone.0158834.
- J01 Miao-En Chien, CyunMeng Jheng, NiMiao Lin, HsienHui Tang, Taele Paul, **Wen-Sheng Tseng**, Mike Y. Chen. "iCAN: A Tablet-Based Pedagogical System for Improving Communication Skills of Children with Autism." *International Journal of Human-Computer Studies* 73 (2015): 79-90.

### Conference Papers:

- C10 **Vincent W.-S. Tseng**, Matthew L. Lee, Laurent Denoue and Daniel Avrahami. "Overcoming Distractions during Transitions from Break to Work using a Conversational Website-Blocking System." In *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems (CHI'19)*.
- C09 **Vincent W.-S. Tseng**, Saeed Abdullah, Jean Costa and Tanzeem Choudhury. "AlertnessScanner: What Do Your Pupils Tell About Your Alertness?" In *Proceedings of the 20th International Conference on Human-Computer Interaction with Mobile Devices and Services (MobileHCI'18)*.
- C08 **Vincent W.-S. Tseng**, Sourav Bhattachara, Fernández-Marqués, Milad Alizadeh, Catherine Tong and Nicholas D. Lane. "Deterministic Binary Filters for Convolutional Neural Networks." In *Proceedings of the Twenty-Seventh International Joint Conference on Artificial Intelligence (IJCAI'18)*.
- C07 Javier Fernández-Marqués, **Vincent W.-S. Tseng**, Sourav Bhattachara and Nicholas D Lane. "On-the-fly deterministic binary filters for memory efficient keyword spotting applications on embedded devices." In *Proceedings of the 2nd International Workshop on Deep Learning for Mobile Systems and Applications (EMDL'18)*.
- C06 Javier Fernández Marqués, **Vincent W.-S. Tseng**, Sourav Bhattacharya and Nicholas Donald Lane. "BinaryCmd: Keyword Spotting with deterministic binary basis." In *the 2018 Conference on Systems and Machine Learning (SysML'18)*.
- C05 **Vincent W.-S. Tseng**, Saeed Abdullah, Michael Merrill, Min Hane Aung, Franziska Wittleder and Tanzeem Choudhury. "Assessing Mental Health Issues on College Campuses: Preliminary Findings from a Pilot Study." In *Proceedings of the 2016 ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp'16)*.
- C04 Rui Wang, Min S. H. Aung, Saeed Abdullah, Rachel Brian, Andrew T. Campbell, Tanzeem Choudhury, Marta Hauser, John Kane, Michael Merrill, Emily A. Scherer, **Vincent W.-S. Tseng**, and Dror Ben-Zeev. "CrossCheck: Toward Passive Sensing and Detection of Mental Health Changes in People with Schizophrenia." In *Proceedings of the 2016 ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp'16)*.

Last updated: January, 2019

- C03 **Wen-Sheng Tseng**, Lun-Kai Hsu, Li-Wei Kang, and Yu-Chiang Frank Wang. "Cross-View Action Recognition via Low-Rank Based Domain Adaptation." *In Image Processing (ICIP), 2013 20th IEEE International Conference on* (pp. 3244-3248).
- C02 Lun-Kai Hsu, **Wen-Sheng Tseng**, Li-Wei Kang, and Yu-Chiang Frank Wang. "Bridging the Gap Between Expression and Emotion Recognition." *In 2013 IEEE International Conference on Multimedia and Expo (ICME), Theme Track for Multimedia for Humanity*. (Oral Presentation; Nominated for Best Paper Award)
- C01 Sheng-Jhe Hsu, **Wen-Sheng Tseng**, Fu-Chieh Hsu and Yung-Ying Lo. "iSpine: A Motion-sensing Edutainment System for Improving Children's Spinal Health." *In CHI'13 Extended Abstracts on Human Factors in Computing Systems*.

## SERVICE

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### Conference Organizing Committees

- Webmaster Co-Chair, Pervasive Health 2017

### Student Volunteering

- ACM ISWC/UbiComp 2016
- ACM UbiComp Program Committee Meeting 2015

### Reviewer

- ACM IMWUT 2019
- ACM IMWUT 2018
- ACM Pervasive Health 2018
- ACM CHI 2017
- ACM IMWUT 2017
- IEEE ICIP 2013
- IEEE ICME 2013

### Student Representative at Cornell

- Graduate and Professional Student Assembly 2017
- Admission Committee 2016

## AWARDS

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- ACM SIGCHI Student Game Competition Finalist 2013
- Trend Micro Big Data Innovation Programming Contest Third Place 2013