

# Yi-Hsuan Hsieh

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## Education

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### University of Texas at Austin, U.S.A. (2014 Fall - present)

PhD student  
Computer Science Department  
Advisor: Professor Aloysius K. Mok.

### National Taiwan University, Taipei Taiwan (September 2011 - June 2013)

Master of Science  
Department of Computer Science and Information Engineering  
Advisor: Professor Hao-Hua Chu

### National Tsing Hua University, Hsinchu Taiwan (September 2007 - June 2011)

Bachelor of Science  
Department of Computer Science

## Publications

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- James Davis, **Yi-Hsuan Hsieh**, Hung-Chi Lee, "Humans Perceive Flicker Artifacts at 500 Hz", Nature Scientific Reports, 03 February 2015.
- Chuang-Wen You, Hsin-Liu (Cindy) Kao, Bo-Jhang Ho, Nan-Chen Chen, **Yi-Hsuan Hsieh**, Polly Huang, Hao-hua Chu, "ThermalProbe: Exploring the Use OF Thermal Identification for Per-User Energy Metering", IEEE Internatioal Conference on Green Computing and Communications ( GreenCom 2014 ), Taipei Taiwan, September 2014 (**Best Paper Award**)
- Kuo-Cheng Wang, **Yi-Hsuan Hsieh**, Chi-Hsien Yen, Chuang-Wen You, Yen-Chang Chen, Ming-Chyi Huang, Seng-Yong Lau, Hsin-Liu (Cindy) Kao, Hao-Hua Chu, "SoberDiary: A Phone-based Support System for Assisting Recovery from Alcohol Dependence", video presentation, ACM UbiComp 2014.
- Chuang-Wen You, Yung-Huan Hsieh, Wen-Huang Cheng, **Yi-Hsuan Hsieh**, "AttachedShock: Design of a Crossing-based Target Selection Technique on Augmented Reality Devices and its Implications", International Journal of Human-Computer Studies, vol. 72, issue 7, July 2014.
- Ted Tsung-Te Lai, Wei-Ju Chen, **Yi-Hsuan Hsieh**, Kuei-Han Li, Ya-Yunn Su, Polly Huang, Hao-Hua Chu, "Why Blow Away Heat? Harvest Server's Heat Using Thermoelectric Generators", ACM Conference on Architectural Support for Programming Languages and Operating Systems 2012 (ASPLOS'12), Poster Section, London, UK. (**Best Poster Award**)

## Awards

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- Microelectronics and Computer Development (MCD) Fellowships, University of Texas at Austin, 2014
- The Best Paper Award, IEEE GreenCom 2014 Taipei Taiwan
- The Best Poster Award, ACM ASPLOS'12 London
- ZyXEL Scholarship (Networking equipment vendor in Taiwan), 2010
- Scholarship of Exchange Program to TsingHua University, Beijing, China, summer 2009
- Academic Achievement Awards (ranked 1<sup>st</sup> in GPA), NTHU, 2007/ 2008/ 2010

## Research Experience

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- Graduate Research, UbiComp Lab, National Taiwan University (Aug. 2011 - June. 2013)
- Research Assistant, UbiComp Lab, National Taiwan University (July 2013 – July 2014)  
Advisor: Professor Hao-Hua Chu
- Adjunct Research Assistant, Academia Sinica (Oct. 2013 - Dec. 2013)

## Research Projects (Selected)

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- **Humans Perceive Flicker Artifacts at 500 Hz:** This is a collaboration project with visiting Prof. James David from UC Santa Cruz. Previous research shows that when televisions and monitors update at a sufficient high rate, i.e., the critical flicker fusion rate (50 ~ 90 Hz), humans cannot distinguish modulated light from a stable field. However, this work shows that humans can perceive artifacts at rate over 500Hz with unconscious rapid eye movements (saccades) across high frequency edges. Therefore, today's monitors' frame rate, 72Hz, is not sufficient for modern 3D technology, which requires images of high frequency edges. This work was published at Nature Scientific Reports on 03 February 2015.
- **SoberDiary.** Collaborate with doctors at an alcohol rehabilitation center to design and develop a mobile system to support alcohol-abuse patients returning to regular lives after they leave the rehabilitation center. This mobile system includes a Bluetooth breath analyzer and a phone application. The breathalyzer checks a patient's breath alcoholic level and reports it to the phone. The phone application provides data visualization for self-behavioral awareness and storybook-based feedback to motivate sobriety. This work was published as a video presentation at ACM UbiComp 2014.
- **Why Blow Away Heat? Harvest Server's Heat Using Thermoelectric Generators.** Harvest electronic energy from wasted heat by deploying lots of thermoelectric generators (TEGs) on or nearby servers' IC hotspots, such as CPU, memory chips, etc. The harvested energy can be used to power fans or sensors in a server room. This work was published as a poster in ASPLOS' 2012.
- **Road rage detection:** This is a phone-based system that detects road rage events around drivers. By deploying two cameras in the front and at the back of a vehicle and performing calculation on one smartphone, the mobile system can detect road rage such as overtaking and dangerous tailgating surround drivers. After detection, the mobile phone sends alert signals to the drivers for defensive driving.

## Service

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- ACM UbiComp 2014 external reviewer (March 2014)
- ACM MobiSys 2013 student volunteer, Taipei, Taiwan (June 25 - 28, 2013)

## Proficiency

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**Programming:** C, C++, Matlab, Arduino, OpenCV

**Languages:** English (fluent), Mandarin Chinese (native), Taiwanese (fluent)