

蔡欣叡 Hsin-Ruey Tsai

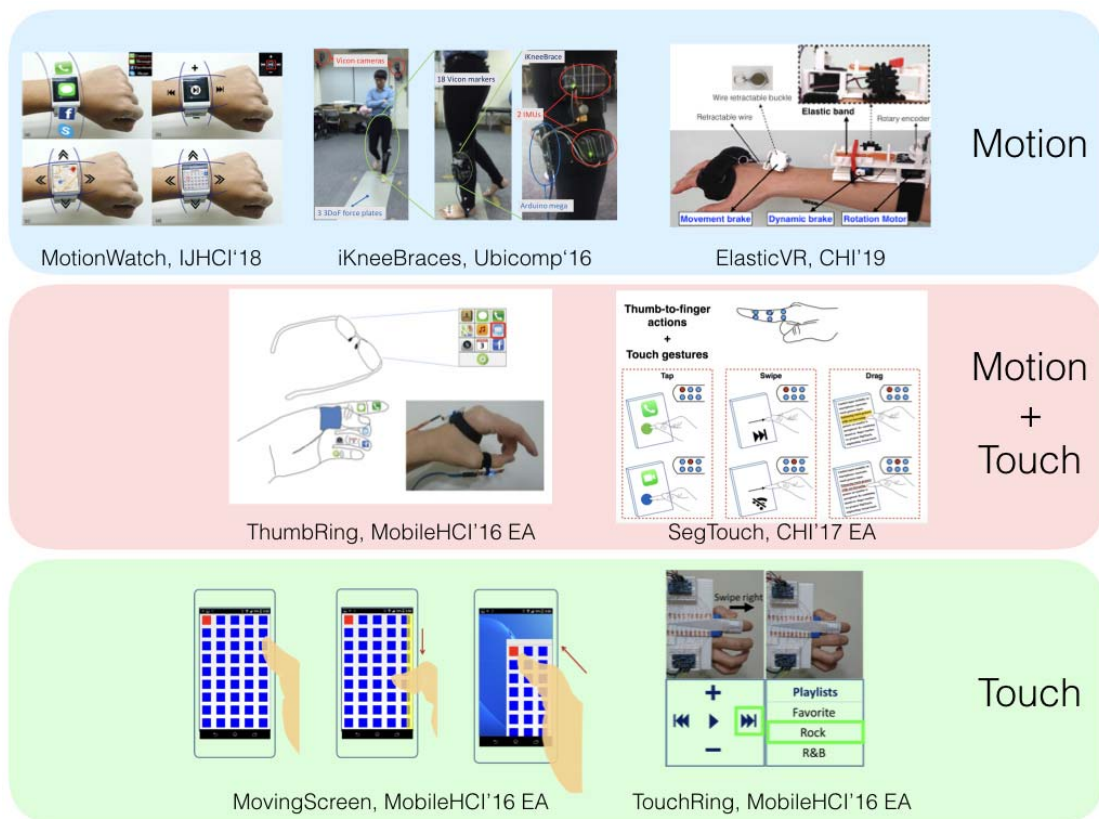
hsnuhrt@gmail.com



Hsin-Ruey (Ray) Tsai is a postdoctoral researcher of Department of Computer Science & Information Engineering, National Taiwan University (NTU), Taipei, Taiwan. He received the Ph.D. degree from NTU in December 2017 and completed Graduate Students Study Abroad Program (千里馬計畫) from Ministry of Science and Technology, Taiwan, visiting Professor Jun Rekimoto's lab in the University of Tokyo since March 2017 to

January 2018.

He focuses on human-computer interaction (HCI) research. Novel input techniques on mobile and wearable devices were his research interests in the doctoral program in NTU. He currently broadens the research area to virtual reality (VR), augmented human (AH) and haptic interactions since visiting in Rekimoto lab in U-Tokyo. His doctoral dissertation topic is "Enhancing Mobile and Wearable I/O Using Motion and Touch Sensing". The research interests are shown in the following figure.



Education



Doctoral program (2012 - 2017)

Department of Computer Science and Information Engineering

National Taiwan University, Taiwan

Advisor: Prof. Yi-Ping Hung



M.S. (2010 - 2012)

Department of Computer Science and Engineering

National Chung Hsing University, Taiwan

Advisor: Prof. Gwoboa Horng



B.S. (2006 - 2010)

Department of Computer Science and Engineering

National Chung Hsing University, Taiwan

Experiences



Postdoctoral Research (2018 - now)

National Taiwan University, Taiwan

PI: Prof. Bing-Yu Chen



Visiting Researcher (2017 - 2018)

The University of Tokyo, Japan

Advisor: Prof. Jun Rekimoto



Research Assistant (2012 - 2017)

National Taiwan University, Taiwan

PI: Prof. Yi-Ping Hung



Research Assistant (2015 - 2016)

Institute for Information Industry, Taiwan



Lecturer (2014 - 2015)

Vanung University, Taiwan

Course: Algorithm



Research Assistant (2012 - 2013)

Academia Sinica, Taiwan

PI: Prof. Chu-Song Chen



Research and Teaching Assistant (2011 - 2012)
National Chung Hsing University, Taiwan
PI: Prof. Gwoboa Horng

Awards

Best Talk Award, ACM Symposium on User Interface Software and Technology (UIST) 2016.

Honorable-Mentioned Award, IPPR Conference on Computer Vision, Graphics, and Image Processing (CVGIP), 2016.

Enterprise Award, Mobileheros Competition, 2015.

Honorable Mentioned Award and **Enterprise Award**, Mobileheros Competition, 2014.

Face Recognition Champion and **Facial Expression Recognition Champion**, the 8th UTMVP (Utechzone Machine Vision Prize), 2012.

Publications

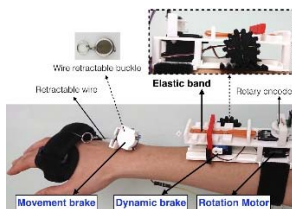
Journal Papers



Hsin-Ruey Tsai, Po-Chang Chen, Liwei Chan, Yi-Ping Hung, “One-handed Input through Rotational Motion for Smartwatches” International Journal of Human-Computer Interaction (IJHCI), 2018.

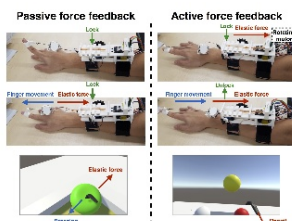
(<https://youtu.be/785zjBEEkpE>)

Conference Papers



Hsin-Ruey Tsai, Jun Rekimoto, Bing-Yu Chen “ElasticVR: Providing Multilevel Continuously-Changing Resistive Force and Instant Impact Using Elasticity for VR” In Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems (CHI), 2019. (Accepted)

(<https://youtu.be/GPJiITwIH2o>)



Hsin-Ruey Tsai, Jun Rekimoto, “ElasticVR: Providing Multi-level Active and Passive Force Feedback in Virtual Reality Using Elasticity” In Proceedings of the 2018 CHI Conference Extended Abstracts on Human Factors in Computing Systems (CHI), 2018. (Demo)

(<https://youtu.be/jELb48Obef0>)

(獲科技部國內專家學者出席國際學術會議補助)

Hsin-Ruey Tsai, Te-Yen Wu, Da-Yuan Huang, Min-Chieh Hsiu, Jui-Chun Hsiao, Yi-Ping Hung, Mike Chen, Bing-Yu Chen, “SegTouch: Enhancing Touch Input While Providing Touch Gestures on Screens Using Thumb-To-Index-Finger Gestures” In Proceedings of the 2017 CHI Conference Extended Abstracts on Human Factors in Computing Systems (CHI), 2017. (Poster)



(https://youtu.be/_zHrSUJKFFs)

(獲傑出人才基金會優秀學生出國開會補助)

Chiuang Wang, Te-Yen Wu, Hsuang-Ming Yeh, Bryan Wang, **Hsin-Ruey Tsai**, Rong-Hao Liang, Mike Chen, Yi-Ping Hung, “CircuitStack: Supporting Rapid Prototyping and Evolution of Electronic Circuits” In Proceedings of the 29th Annual Symposium on User Interface Software and Technology (UIST), 2016. (**Best talk award**)



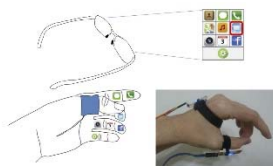
(<https://youtu.be/JxJI2ccVFEQ>)

Hsin-Ruey Tsai, Shih-Yao Wei, Jui-Chun Hsiao, Ting-Wei Chiu, Yi-Ping Lo, Chi-Feng Keng, Yi-Ping Hung, Jin-Jong Chen, “iKneeBraces: Knee Adduction Moment Evaluation Measured by Motion Sensors in Gait Detection” In Proceedings of the 2016 ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp), 2016.



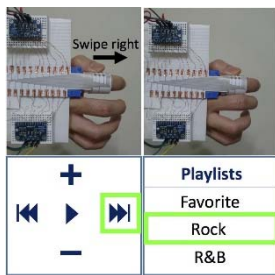
(獲科技部研究生出席國際會議補助)

Hsin-Ruey Tsai, Cheng-Yuan Wu, Lee-Ting Huang, Yi-Ping Hung, “ThumbRing: Private Interactions Using One-handed Thumb Motion Input on Finger Segments” In Proceedings of the 18th International Conference on Human-Computer Interaction with Mobile Devices and Services Adjunct (MobileHCI), 2016. (Poster)

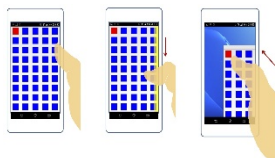


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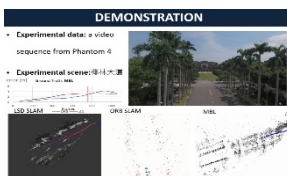
(獲邁頂計畫出國補助)



Hsin-Ruey Tsai, Min-Chieh Hsiu, Jui-Chun Hsiao, Lee-Ting Huang, Mike Chen, Yi-Ping Hung, “TouchRing: Subtle and Always-Available Input Using a Multi-touch Ring” Proceedings of the 18th International Conference on Human-Computer Interaction with Mobile Devices and Services Adjunct (MobileHCI), 2016. (Poster)
 (https://youtu.be/RM0xVoAmz6o)
 (獲邁頂計畫出國補助)



Hsin-Ruey Tsai, Da-Yuan Huang, Chen-Hsin Hsieh, Lee-Ting Huang, Yi-Ping Hung, “MovingScreen: Selecting Hard-to-Reach Targets with Automatic Comfort Zone Calibration on Mobile Devices” Proceedings of the 18th International Conference on Human-Computer Interaction with Mobile Devices and Services Adjunct (MobileHCI), 2016. (Poster)
 (https://youtu.be/1h59UAF6fMY)
 (獲邁頂計畫出國補助)



Meng-Hsun Chou, **Hsin-Ruey Tsai**, Qiao Liang, Tian-Yi Shen, Kuan-Wen Chen, Yi-Ping Hung, “Visual-Inertial Ego-Positioning for Flying Cameras” Asian Conference on Computer Vision (ACCV), 2016. (Demo)

Qiao Liang, Tian-Yi Shen, Meng-Hsun Chou, Kuan-Wen Chen, **Hsin-Ruey Tsai**, Yi-Ping Hung, “Visual-Inertial Ego-Positioning for Flying Cameras” IPPR Conference on Computer Vision, Graphics, and Image Processing (CVGIP), 2016. (**Honorable-mentioned award**)



Ping-Hsuan Han, Da-Yuan Huang, **Hsin-Ruey Tsai**, Po-Chang Chen, Chen-Hsin Hsieh, Kuan-Ying Lu, De-Nian Yang, Yi-Ping Hung, “Moving around in virtual space with spider silk” ACM SIGGRAPH Emerging Technologies, 2015. (Demo)
 (https://youtu.be/r_b1xeAsc_Y)



Chih-Chuan Lai, Sheng-Wen Shih, **Hsin-Ruey Tsai**, Yi-Ping Hung, “3-D Gaze Tracking Using Pupil Contour Features” International Conference on Pattern Recognition (ICPR) 2014.

Research Projects

補助博士生赴國外研究(千里馬計畫)「東京大學研修計畫書-行動式與穿戴式裝置上的創新互動與應用」 - 科技部 (2017 - 2018)

前瞻下世代行動通訊終端關鍵技術研究 - 科技部(產學大聯盟)、聯發科 (**project leader**) (2015 - 2017)

感測足部裝置軟硬體整合與與生物力學驗證 - 資策會 (2016)

智慧足部裝置感知與分析軟硬體整合 - 資策會 (2015)

智慧型視訊監控系統產學合作專案 - 中興保全 (2012 - 2014)

聯網電視體感促健系統之研發 - 國科會、華電聯網 (2012 - 2013)

Review Experiences

ACM International Conference on Human-Computer Interaction with Mobile Devices and Services Adjunct (MobileHCI), 2019.

The Seventh International Symposium of Chinese CHI (Chinese CHI), 2019.

Augmented Human International Conference (AH), 2019.

ACM CHI Conference on Human Factors in Computing Systems (CHI), 2019.

ACM International Conference on Tangible, Embedded and Embodied Interaction (TEI), 2019.

ACM SIGGRAPH Asia Emerging Technologies, 2018.

Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT), 2018.

ACM International Conference on Human-Computer Interaction with Mobile Devices and Services Adjunct (MobileHCI), 2018.

Augmented Human International Conference (AH), 2018.

International Journal of Human-Computer Studies (IJHCS), 2017.

Augmented Human International Conference (AH), 2017.

ACM International Conference on Tangible, Embedded and Embodied Interaction (TEI), 2017.

ACM CHI Conference on Human Factors in Computing Systems, Work-in-Progress (CHI WIP), 2015.