

CHI-JUI WU

Wanrong Junior High School
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GITHUB [@cjw-charleswu](https://github.com/cjw-charleswu)

RESEARCH INTERESTS

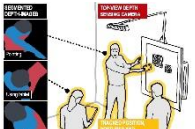
My research interests are in Human-Computer Interaction and Artificial Intelligence, including sensing technologies, mobile devices, smart spaces, ubiquitous computing, proxemic interaction, tangible interfaces, and machine learning. I build novel supporting toolkits for group collaboration and cross-device interaction, and leverage machine intelligence to enhance existing sensing capabilities in interactive spaces. Recently, I have developed a new tracking infrastructure *EagleSense* [C.1] that enables HCI researchers to build and evaluate proxemic-aware, activity-centric, or cross-device interfaces. In my further research, I would like to design and build new cross-device concepts and technologies to support people's individual and collaborative work in ad hoc device ecologies. This includes doing in-the-wild deployment and evaluation in novel application domains.


EDUCATION

MRes. Computational Statistics and Machine Learning, Distinction 2015 – 2016
University College London, UK
Supervisors: Dr. Nicolai Marquardt, Dr. Steven Houben

BSc. Computer Science, First-Class Honours 2011 – 2015
University of St Andrews, UK
Supervisor: Dr. David Harris-Birtill

PUBLICATIONS

[C.1]  **Chi-Jui Wu**, Steven Houben, Nicolai Marquardt. 2017. EagleSense: Tracking People and Devices in Interactive Spaces using Real-Time Top-View Depth-Sensing. To appear In *Proceedings of the 35th Annual ACM Conference on Human Factors in Computing Systems* (Denver, Colorado, USA, May 6 - 11, 2017). CHI'17. ACM, New York, NY.

[J.1]  **Chi-Jui Wu**, Aaron Quigley, David Harris-Birtill. 2017. Out of Sight: A Toolkit for Tracking Occluded Human Joint Positions. In *Personal and Ubiquitous Computing*, 21(1), 125-135. Springer London.

RESEARCH EXPERIENCE

Research Intern, University College London, UK November 2015 – September 2016
Explored research areas and tools within physical computing, ubiquitous computing, proxemic interaction, and sensor-based systems. Developed a depth-sensing tracking infrastructure for ad hoc cross-device interaction using computer vision and machine learning algorithms.
Supervisors: Dr. Nicolai Marquardt, Dr. Steven Houben, Frederik Brudy

Research Intern, University of St Andrews, UK June 2015 – September 2015
Explored computer system infrastructures for software recomputation. Developed a web application that takes a GitHub repository URL as input and creates a new virtual machine, where the computer program is rebuilt from source.
Supervisor: Professor Ian Gent

Research Intern, University of St Andrews, UK June 2014 – September 2014
Investigated interactions between depth-sensing data visualization and (i) the user's ability to detect visual notifications and (ii) their awareness of surrounding users. Designed and conducted individual and group user studies using the interface developed, focusing on tasks that require awareness of other users' spatial location.
Supervisors: Professor Aaron Quigley, Dr. Per Ola Kristensson

TEACHING EXPERIENCE

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| English Teaching Assistant, Wanrong Junior High School, Hualien, Taiwan | January 2017 – Present |
| Teaching in a remote rural area in Taiwan as substitute (compulsory) military service | |
| Personal Tutor | January 2010 – Present |
| Mathematics and Chemistry (high school), Computer Science (undergraduate and graduate), English (non-native speakers) | |

AWARDS

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| Honourable Mention, University College London Data Science Student Challenge, UK | February 2016 |
| Best Use of Mendeley API, Hack Cambridge, UK | January 2016 |
| Dean's List, University of St Andrews, UK | June 2015 |
| Dean's List, University of St Andrews, UK | June 2014 |
| Finalist, Barclays Openminds Hackathon, UK | November 2013 |
| Winner, J.P. Morgan Code for Good Challenge, UK | November 2013 |

SCHOLARSHIPS AND GRANTS

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| ACM SIGCHI Student Travel Grant for ISS'16 (\$1,500) | 2016 |
| International Undergraduate Scholarship, University of St Andrews, UK (£2,500 / year) | 2011 – 2015 |

SKILLS

Programming

Java, Python, C, C++, C#, Matlab, JavaScript, Go

User Interface

Swing, JavaFX, WinForms, WPF

Hardware

Microsoft Kinect, Phidget, Arduino

Computer Vision (OpenCV), **Machine Learning** (Scikit-Learn, Keras, XGBoost), **Scientific Computing** (Numpy, Scipy, Pandas, Matplotlib, Seaborn), **Information Visualization** (D3.js), **Graphics** (WebGL, Processing), **Mobile** (Android), **Web Front-End** (Markdown, HTML, CSS, Bootstrap, jQuery), **Web Back-End** (Flask, Tornado, Django), **Game** (Unreal, Phaser, pixi.js), **Version Control** (Git, TravisCI), **Word Processing** (LaTeX), **Operating System** (UNIX), **Virtual Machine, Container** (Vagrant, Docker)

COURSES

University College London

Supervised Learning, Graphical Models, Advanced Topics in Machine Learning, MRes Computational Statistics and Machine Learning Dissertation, Investigating Research, Research Professional Development

University of St Andrews

Computer Science (Year 1), Internet Programming, Mathematics (Year 1), Psychology (Year 1 and 2), Reasoning and Knowledge, Foundations of Computation, Advanced Computer Science, Software Engineering, Computational Complexity, Major Software Team Project, Operating Systems, Artificial Intelligence, Human Computer Interaction, Component Technology, Logic and Software Verification, Computer Graphics, Multimedia, Constraint Programming, Artificial Intelligence Practice, Human Computer Interaction Practice, Major Software Project

POSITIONS OF RESPONSIBILITIES

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| Treasurer, University of St Andrews Computing Society, UK | 2014 – 2015 |
| Secretary, University of St Andrews Psychology Society, UK | 2013 – 2014 |
| Events Coordinator, University of St Andrews Psychology Society, UK | 2012 – 2013 |
| First-year Rep, University of St Andrews Breakaway (Hill-Walking) Society, UK | 2011 – 2011 |