Hao **Ju**

Research Assistant

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Research Interests

Human Computer Interaction Interaction Techniques, Wearables, Usability

Education & Employment

City University of Hong Kong — *Hong Kong, P.R.China*

Research Assistant — *Sept 2018 - Present*

- Collaborating with Dr. Kening Zhu

School of Electronic Engineering, UESTC (985,211) — *Chengdu, P.R.China*

B.Eng. In Electronic Information — *Sep. 2014 - July 2018*

- GPA: 3.86/4 (Final year 3.91/4), Ranking: 5/42
- Honorary Graduate of UESTC
- IELTS: Total 8.0; Reading 9.0, Listening 9.0, Speaking 8.0, Writing 6.5
- GRE: Total 326; Verbal 161, Quantitative 165, Analytical Writing 3.0

Shared Reality Lab, McGill University — *Montreal, Canada*

Mitacs Globalink Intern — *July 2017 - Oct. 2017*

- Supervised by Prof. Jeremy Cooperstock (http://www.cim.mcgill.ca/ jer/)

Ngee Ann Polytechnic — *Singapore*

Short-term visiting student — *May 2017*

Siglent Co. Ltd. — *Shenzhen, P.R.China*

Intern — *Aug. 2016*

Publications

The Singing Cubes: A Multi-Sensory Programming Media (Unpublished)

Joint First Author — *Dec. 2018*

- Hao Ju, Kam Leung Ma, and Kening Zhu. To be submitted to the ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp) 2019

Pressure or Movement? Usability of Multi-Functional Foot-Based Interfaces

Second Author — *Sep. 2017*

- Taeyong Kim, Hao Ju, and Jeremy Cooperstock. 2018. In proceedings of ACM SIGCHI Conference on Designing Interactive Systems (DIS) 2018. ACM. 1219-1227.

A Data-Driven XGBoost-Based Filter for Target Tracking

Fourth Author — *July 2018*

- Bowen Zhai, Wei Yi, Ming Li, Hao Ju, and Lingjiang Kong. To appear as poster presentation in IET Radar Conference 2018.

Research Projects

The Singing Cubes: A Multi-Sensory Programming Media — *Hong Kong*

Research Assistant — *Oct. 2018 - Present*

- A set of musical building blocks introducing basic programming ideas to the visually impaired schoolchildren. System developer.

Simulating Touch Experience of Different Materials Through Thermal Feedback — *Hong Kong*

Research Assistant — *Sept. 2018 - Present*

- Designed for VR developers, this system simulates the thermal feedback interacting with items of different materials, e.g. metal, wood, ice, etc. according to the material, temperature and humidity of the target selected by users.

A Thermal-Based Displaying Device for the Visually Impaired — *Hong Kong*

Research Assistant — *Aug. 2018 - Oct.2018*

- A thermal-based displaying device prototype, set in the context of geographical education among visually impaired schoolchildren. We are planning to investigate its usability (especially in picture displaying) compared with traditional Brailles.

Target Recognition and Tracking based on XGBoost (Thesis)

Chengdu, China

Undergraduate Researcher, UESTC — *Oct. 2017 - May 2018*

- Developed a supervised learning based target tracking algorithm and estimated its performance versus traditional target tracking algorithms (filtering algorithm: Kalman, LSM, target co-relating algorithms: JPDA, NNJPDA). Implemented in MATLAB and Python

Raising the Heat

Montreal, Canada

Research Assistant, Shared Reality Lab, McGill University — *Sep. 2017 - Oct. 2017*

- Explored the possibility of using Electro-Muscular Stimulation to simulate the burning-hot sensation. Hardware and firmware developer, enhancing the existing prototype for more precise experiment results

Usability of Multi-Functional Foot-based Interfaces

Montreal, Canada

Research Assistant, Shared Reality Lab, McGill University — *Jul. 2017 - Sep. 2017*

- We compared the performance of two mainstream foot interaction methods (foot rocking and heel-pivoted rotation) in selection and parameter controlling tasks, set in the use case of a hands-free interface designed for seated musicians.

Data Secured USB Mass Storage Device

Chengdu, P.R.China

Undergraduate Researcher, School of Electronic Engineering, UESTC — *Mar. 2017 - Present*

- Developed a data secured USB Flash Disk capable of data encrypting, sending anti-losing alerts and data retrieving.
- Ranked 7th among 125 teams in the provincial final of the National 'Internet Plus' Innovation and Entrepreneurship Competition.

Network-based RF Device Analyzer

Chengdu, P.R.China

Undergraduate Researcher, School of Electronic Engineering, UESTC — *Mar. 2016 - July 2016*

- Developed a network-based RF device analyzer with 4 GHz bandwidth and 125 MHz baseband bandwidth based on Xilinx Virtex VC707.
- Awarded second prize of Southwest China in 2016 National College Student Smarter Connected System Innovation Competition

Honors and Awards

Honors and Scholarships

Mitacs Globalink Graduate Fellowship

CAD 15,000, given to former Globalink Research Interns returning to Canada for graduate studies

Honorary Graduate of UESTC

10% — *Oct. 2017*

Renmin Scholarship 2017

First Class in 2017, CNY 1,500 (USD 226) — *Oct. 2017*

National Internet Security Scholarship

CNY 30,000 (USD 4,556), 100 among all undergraduates and graduate students in China per year — *Aug. 2017*

Jiuzhou Scholarship 2016

CNY 1,000 (USD 150), 2 per school per year — *Sep. 2016*

Renmin Scholarship 2015

Third Class, CNY 500 (USD 75) — *Oct. 2015*

Awards

2017 'Internet Plus' Innovation and Entrepreneurship Competition

Second Prize (provincial level) — *Jul. 2017*

OpenHW 2016 National College Student 'Smarter Connected' System Innovation Competition

Second Prize of Southwest China Area — *Jul. 2016*

National English Competition for College Students 2016

Special Prize in National Final (Class C, For non-English professionals), 0.1% — *May. 2016*

COMAP Interdisciplinary Contest In Modeling

Honorable Mention, 30 % — *Apr. 2016*

Relevant Skills

Programming	C, C#, MATLAB, VHDL, LaTeX, Python
Tools	Altium Designer, Quartus II, VICON, Unity 3D, AutoCAD
Embedded Systems	Arduino, STM32, MCS 8051
Languages	Chinese (native), English (fluent, IELTS 8.0), French (basic, CEFR A1, certified by Alliance Française)