

Shaoyu Cai

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Person Webpage: <https://shaoyuca.github.io/mypage/>

Citizenship: China

Research interests

Human-Computer Interaction, Cross-modal Learning, Multi-modal Interaction, Tactile Signal Processing, Haptic Interface, Virtual Reality

Education

City University of Hong Kong

Hong Kong SAR, China

Ph.D in Creative Media

09/2019 – Present

Supervisor: Professor Kening Zhu.

Huazhong Agricultural University

Wuhan, China

B.Eng in Mechanical Design & Automation

09/2014 – 06/2018

Thesis: Designing of Automatic Flatness Detection System Based on PLC

Publications

[c5] FrictGAN: Frictional Signal Generation from Fabric Texture Images using Generative Adversarial Network

Shaoyu Cai, Yuki Ban, Takuji Narumi, and Kening Zhu.

In ICAT-EGVE 2020: International Conference on Artificial Reality and Telexistence & Eurographics Symposium on Virtual Environments, pp. 11-15. The Eurographics Association, 2020.

[c4] ThermAirGlove: A pneumatic glove for thermal perception and material identification in virtual reality

Shaoyu Cai, Pingchuan Ke, Takuji Narumi, and Kening Zhu.

In 2020 IEEE Conference on Virtual Reality and 3D User Interfaces (VR), pp. 248-257. IEEE VR, 2020.

[c3] Demonstration of thermairglove: A pneumatic glove for material perception in virtual reality through thermal and force feedback

Shaoyu Cai, Pingchuan Ke, Shanshan Jiang, Takuji Narumi, and Kening Zhu.

In SIGGRAPH Asia 2019 Emerging Technologies, pp. 11-12. 2019.

[j1] A sense of ice and fire: Exploring thermal feedback with multiple thermoelectric-cooling elements on a smart ring

Kening Zhu, Simon Perrault, Taizhou Chen, **Shaoyu Cai**, and Roshan Lalintha Peiris.

International Journal of Human-Computer Studies 130 (2019): 234-247.

[c2] Embodied Weather: Promoting Public Understanding of Extreme Weather Through Immersive Multi-Sensory Virtual Reality

Pingchuan Ke, Kai-Ning Keng, Shanshan Jiang, **Shaoyu Cai**, Zhiyi Rong, and Kening Zhu.

In The 17th International Conference on Virtual-Reality Continuum and its Applications in Industry, pp. 1-2. 2019.

[c1] **HapTwist: creating interactive haptic proxies in virtual reality using low-cost twistable artefacts**

Kening Zhu, Taizhou Chen, **Shaoyu Cai**, Feng Han, and Yi-Shiun Wu.

In SIGGRAPH Asia 2018 Virtual & Augmented Reality, pp. 1-2. 2018.

Research experience

The University of Tokyo Tokyo, Japan
Graduate School of Information Science and Technology Visiting Researcher
Cyber Interface Lab 01/2020 – 03/2020
Mentors: Prof. Takuji Narumi and Prof. Yuki Ban

City University of Hong Kong Hong Kong SAR, China
School of Creative Media Research Assistant
Multimodal and Embodied Interaction (MEI) Lab 09/2018 – 08/2019
Mentor: Prof. Kening Zhu

National Taipei University Taipei, China Taiwan
Department of Electrical Engineering Exchanging Student
Artificial Intelligence & Robotics Technology Lab 09/2016 – 01/2017
Mentor: Prof. Hooman Samani

Teaching experience

SM1103A: Introduction to Media Computing Teaching Assistant
School of Creative Media, City University of Hong Kong Fall 2020

SM2715: Creative Coding Teaching Assistant
School of Creative Media, City University of Hong Kong Spring 2021

Industry experience

WISfur Thermal Technology Wuhan, China
Intern Summer 2017

YTO Group Corporation Luoyang, China
Student Intern Summer 2016

Talks and tutorials

ICAT-EGVE 2020 12/2020
Online presentation for *FrictGAN* published in ICAT-EGVE 2020

The Night of IEEE VR, China VR 2020 workshop 05/2020
Online presentation for *ThermAirGlove* published in IEEE VR

IEEE Virtual Reality 2020 03/2020

Online oral presentation for the full paper of *ThermAirGlove*

SIGGRAPH Asia 2019, Emerging Technologies

11/2019

Oral presentation and real-time demo for *ThermAirGlove*

Honors

Best Paper Audience Choice Award

ICAT-EGVE 2020

Research Tuition Scholarship 2020/21

City University of Hong Kong

Special Thanks for Speakers

China VR 2020

Outstanding Graduate Certificate 2018

HZAU

Skills

Programming

Proficient in: Python, TensorFlow, PyTorch, Keras, MATLAB.

Familiar with: JavaScript, C.

Prototyping

Proficient in: Arduino, Processing, 3D Printing & Laser cutting.

Familiar with: PCB, AutoCAD.

Languages

Mandarin Chinese (Native), English (Fluent), Cantonese (Competent), Japanese (Basic)

Service and outreach

Paper Reviewing

CHI 2021 Papers, CHI 2020 Papers (Special Recognitions), MobileHCI 2020 Papers (Special Recognitions), SUI 2020 Papers

SIGGRAPH Asia 2019 & 2020, Emerging Technologies

CHI 2019 Late-Breaking Work

Committee Member

CHI 2021 Late-Breaking Work

CHI 2020 Late-Breaking Work

Memberships

ACM student member

2019.10-present

References

Prof. Kening Zhu

PhD supervisor

Assistant Professor at the School of Creative Media & Department of Computer Science, City University of Hong Kong

Email: keninzhu@cityu.edu.hk

Prof. Takuji Narumi

Research mentor

Associate Professor at the Graduate School of Information Science and Technology, The University of Tokyo

Email: narumi@cyber.t.u-tokyo.ac.jp