Sark Pangrui Xing | CV

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sarkrui

Personal

Name **Sark**, Pangrui Xing.

Nationality **Chinese**.

Profession **Interaction Designer**, HCI Researcher, 25 years old.

I am independent, proactive, and able to play different roles within projects. I have a deep affinity with applying state of the art technologies in designing interactive products, systems. I am keen to bring Tangible Interactions into connected contexts. I very much appreciate Peripheral Interaction (allowing effortless interaction) and Radical Atoms (seamlessly coupling the physical and digital world). I possess the skill sets (e.g. rapid prototyping, user evaluation, and analysis techniques) to generate, develop, and evaluate design with aesthetics and value.

Education

2021 - Present **PhD. Student, The Hong Kong Polytechnic University**, *Hong Kong SAR*.
Specializing in Designing Tangible Internet of Things.

2018 - 2020 **M.Sc. Eindhoven University of Technology**, *Eindhoven, The Netherlands*.
Specialized in designing interactive systems, products and investigated theories in the field of Human-Computer Interaction.

2014 - 2018 **B.Eng. Engineering. Beijing Normal University, Zhuhai**, *Zhuhai, China*.
Covered the whole spectrum of Design topics. Specialized in acquiring hands-on prototyping skills and developing classic and/or interactive products.

Recognition

Exhibition **2019 Dutch Technology Week**, *Strijp S, Eindhoven, the Netherlands*.

Award **2018 Excellent Departmental Graduate**, *achieved 88/100*.

Patent Xing, P. 2017. Folded paper toy kit. *CN 206,404,327 U, filed Dec 26, 2016, and issued August 15, 2017*

Patent Xing, P. 2017. The driver for folded paper toy kit. *ZL 201630571980.0 , filed Nov 24, 2016, and issued June 20, 2017*

Short-listed Award 2016 China Universities Industrial Design Competition

Silver Award **2016 DiD Award (Dongguan Cup)**, *50,000 RMB cash prize*.

Exhibition 2016 8th Guangdong Industrial Design Expo

Exhibition 2016 2nd Biennale of The Guangdong College Design Works

Scholarship **2016, 1st Prize Scholarship**, *#1 ranked candidate in the department*.

Experience

February 2020 - Present **ESPBoost: Prototyping with Bits and Atoms**, *Graduation Project*, TU Eindhoven.

ESPBoost is an ongoing project deriving from my final master project. It introduces a custom toolkit that encapsulates essential components for rapidly prototyping internet of things (IoT) and tangible interaction together. As studies related to Internet of Tangible Things (IoTT) currently address on the early phrase of design explorations, we learned there is a need of rapid prototyping tools to tangibly evaluate IoTT concepts in the wild. ESPBoost featured in four aspects: connectivity, tangible input, tangible output, and power management. By applying the fabricated ESPBoost onto a challenging design case: Topplr, we surfaced ESPBoost's limitations and addressed the design criteria for the next-step implication and evaluation studies. Lastly, this project has been documented and submitted as a work-in-progress paper to the 2021 ACM International Conference on Tangible, Embedded and Embodied Interaction (scored 2,3,4). I'll be revising it and submitting it to the upcoming CHI 2021 (breaking-late) and/or a full paper to the UIST2021.

September 2019 - Present **Topplr: Designing Tangible Expressions**, *Graduation Project*, TU Eindhoven.

In this individual project, the design opportunities of bi-directional interfaces were explored particularly in a future where objects have their own intentionality. This project grounded on a peripheral interaction design Topplr (exploring tangible input) and further explored what the tangible output could be, what the output means, and how to instigate more resembling designs. This resulted in a more completed Topplr (v2, an emotive interface) and ESPBoost (a design toolkit) respectively. The design will be reported and submitted to *2021 ACM CHI Conference on Human Factors in Computing Systems (Interactivity track)*.

September 2019 - Present 2020 **Puffy: Crafting Novel User Experience through the Lens of Interactive Materiality**, *Design and Research Project*, TU Eindhoven.

Together with a fellow master's student and three researchers, we drafted a pictorial paper for DIS2020 and TEI2021. In this pictorial we present a concrete case in which we took a materiality approach to design a novel interactive artifact that features rich materiality-based interaction with shape-changing and haptic qualities. Our iterative design process consisted of three key activities (analysis, synthesis, and detailing) interlaced back and forth along the whole journey. Using this approach, we analyzed different sources of input, synthesized self-reflections and peers' critiques, as well as detailed the design with iterative prototypes. By offering a reflective analysis of our approach, we demonstrate a highly embodied design process and a set of practical implications, to inspire future creators to design interactions with interactive materiality. The reviewers gave quite high remarks with one scoring 5 and we will be revising and submitting this work to *2021 ACM C&C Conference (Creativity & Cognition)*.

July - August 2019 **NTU IoX Center**, *Research Intern*, Taipei.

IoX Center, formerly Intel-NTU Connected Context Computing Center, is a organization formed jointly by Intel and National Taiwan University. During which, I acted as an individual researcher, analyzing the attributes of interfaces where different types of interactions (namely focused, peripheral, implicit interactions) take place. By categorizing the mental effort required on having control of the interfaces and demanded type of attention on perceiving information from the system. I consequently articulated a table of the characteristics of seamless interfaces and was later submitted to DIS2020 work-in-progress track.

April - June 2019 **Data-enabled Design**, *Design Elective*, TU Eindhoven.
Iteratively developed multiple IoT probes heavily exploited a campus IoT platform named OOCSI and deployed them at two participants' residences to extract numerical data as inspiring materials for consequential data analysis, semi-structured interviews, which consequently resulted in the design for shared responsibilities.

February - April 2019 **Design for Focused and Peripheral Interaction**, *Design Elective*, TU Eindhoven.
Grounded on theories related to attention, calm technology, peripheral interaction, as one in the group of four masters, we developed a tangible music controller to effortlessly perform interactions with music streaming services while working behind the computer. and analyzed the study using both qualitative and quantitative research methods, to determine whether the interactions could be performed in one's periphery of attention. Specifically, I narrated seven Wizard of Oz user tests for the initial design.

November - January 2019 **Designing Intelligence in Interaction**, *Design Elective*, TU Eindhoven.
Equipped with fundamental knowledge about Neural Network, I designed a hair style recommender system called hAIr, which was trained by 1,060 images of people relating to 53 classified hairstyles. Although the trained neural network reaches an accuracy of 28.10% when validated with images that were not used for training, we filmed and demonstrated a high quality demo video of how intelligence can play a role in interaction design.

September 2018 - January 2019 **Social Interactions with Shared Systems**, *Design Project*, TU Eindhoven.
Being engaged in a team of four Masters, we designed a system for shared experience, consisting of two interfaces and I was mainly in charge of the implementation of the physical interface. The concept was iteratively evaluated through consecutive usability tests, field deployment, and was exhibited on *2019 Dutch Technology Week*.

2016 – 2017 **Industrial Design Research Studio**, *Teaching Assistant*, BNUZ, Zhuhai.
I led a team, consisting of seventeen bachelor's students, in the department of industrial design, organizing sets of activities with peer students in participating domestic and international design competitions, resulting in highlighted works on *iF Talent Award, DiD Award, 3DDS, etc.*

September - December 2016 **2016 DiD Award (Dongguan Cup)**, *Project Lead*, Dong Guan.
In the collaboration with a senior industrial designer, I ideated the original concept of Pikapika (a remotely control-able origami) and I was in charge of the origami design, film filming, and editing. The design won a silver award among 3,200 submissions across more than a dozen of countries.

August 2015 **2015 Dafen Maker Summer Camp**, *Contestant*, Shenzhen.
A joint activity supported by Tongji University, Shenzhen Municipal Government and Dafen Oil Painting Village, in which I helped a local artefact merchant in exploring new applications of wooden-engraving. The design was awarded with a 3rd prize.

Languages

Native Madarin
Native Hokkien
Fluent English

Skills

Front-end **HTML/CSS**, JavaScript.

Back-end	**Arduino(C/C++)**, Processing, Linux/Unix script.
Database	**OOCSI(data foundry), Firebase Realtime Database**.
Prototyping	**Electronics, Foam/Laser-cut/3D modelling**, Sketching, GUI Mock-up, PCB Design.
User Evaluation	**Wizard of Oz**, Field Study, Semi-structured Interview, Thematic Analysis.
Computer-aid Design	**Phototshop, SolidWorks, Keyshot, Illustrator**, InDesign, Lightroom, Final Cut Pro.

Interests

Running	Statistics: over 3,427 km, '20 1/4 Marathon Rotterdam, '19 Haft Marathon Eindhoven, '19 Semi Marathon Paris, '19 Haft Marathon Eindhoven
Swimming	Freestyle, Breaststroke, Butterfly Stroke
Opensource	ESPBoost, PC Build Project, Light Messenger, Q and I, Puffy