

I am a Research Assistant Professor at Pervasive Computing Research Center, Institute of Computing Technology, Chinese Academy of Sciences. My research interests include:

- 1) Ultra low-power sensing techniques;
- 2) Wearables interactive devices;
- 3) Interconnection techniques for cross-device resource distribution.

EDUCATION

2016-2019	PhD, Human Computer Interaction, Computer Science (with honor) Tsinghua University, China	Advisor: Prof. Yuanchun Shi
2011-2013	MSc, Electromagnetics, Electrical Engineering The University of Texas at Austin, USA	Advisor: Prof. Andrea Alu
2007-2011	BSc, Chien-Shiung Wu Honors College/Electrical Engineering Southeast University, China	Prof. Tiejun Cui's Lab

PUBLICATIONS

- 2020** [C.3] **Tengxiang Zhang**, Xin Zeng, Yinshuai Zhang, Ke Sun, Yuntao Wang, and Yiqiang Chen. 2020. ThermalRing: Gesture and Tag Inputs Enabled by a Thermal Imaging Smart Ring. *In Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems (CHI '20)*, 1–13. **(CCF A)**
- [C.2] Yuntao Wang, Zichao (Tyson) Chen, Hanchuan Li, Zhengyi Cao, Huiyi Luo, **Tengxiang Zhang**, Ke Ou, John Raiti, Chun Yu, Shwetak Patel, and Yuanchun Shi. 2020. MoveVR: Enabling Multiform Force Feedback in Virtual Reality using Household Cleaning Robot. *In Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems (CHI '20)*, 1–12. **(CCF A)**
- [O.4] **Tengxiang Zhang** and Steve Hodges. New Opportunities for Sustainable Interaction using Backscatter Sensors. *Workshop on self-powered sustainable interfaces and interactions (SelfSustainableCHI 2020)*
- 2019** [J.5] **Tengxiang Zhang**, Xin Yi, Ruolin Wang, Jiayuan Gao, Yuntao Wang, Chun Yu, Simin Li, Yuanchun Shi. Facilitating Temporal Synchronous Target Selection through User Behavior Modeling. *Proc. ACM Interact. Mob. Wearable Ubiquitous Technol.*, 2,4:159. **(CCF A)**
- [J.4] Yuntao Wang, Jianyu Zhou, Hanchuan Li, **Tengxiang Zhang**, Minxuan Gao, Zhuolin Cheng, Chun Yu, Shwetak Patel, and Yuanchun Shi. FlexTouch: Enabling Large-Scale Interaction Sensing Beyond Touchscreens Using Flexible and Conductive Materials. *Proc. ACM Interact. Mob. Wearable Ubiquitous Technol.*, 3,3:109. **(CCF A)**
- [O.3] Jianfei Shen, **Tengxiang Zhang**, and Yiqiang Chen. Tap2Pair: Associating Wireless Devices with Tapping. *Adjunct Proceedings of UbiComp/ISWC '19*, Pages 346-349.
- 2018** [J.3] **Tengxiang Zhang**, Xin Yi, Ruolin Wang, Yuntao Wang, Chun Yu, Yiqin Lu, and Yuanchun Shi. 2018. Tap-to-Pair: Associating Wireless Devices with Synchronous Tapping. *Proc. ACM Interact. Mob. Wearable Ubiquitous Technol.* 2, 4: 201. **(CCF A)**

- [O.2] **Tengxiang Zhang**. 2018. Toward Pervasive Interaction: Empowering and Enriching Interactions on Resource-constrained Devices. *Adjunct Proceedings of UbiComp/ISWC '18*, Pages 504-509.
- [O.1] **Tengxiang Zhang**, Xin Yi, Chun Yu, Yuntao Wang, Nicholas Becker, and Yuanchun Shi. 2018. TOUCHPOWER: Interaction-based Power Transfer for Power-as-needed Devices. *GetMobile: Mobile Comp. and Comm.* 22, 2: 27–31. *(Invited Highlights)*
- 2017** [J.2] **Tengxiang Zhang**, Xin Yi, Chun Yu, Yuntao Wang, Nicholas Becker, and Yuanchun Shi. 2017. TouchPower: Interaction-based Power Transfer for Power-as-needed Devices. *Proc. ACM Interact. Mob. Wearable Ubiquitous Technol.* 1, 3: 121:1–121:20. *(CCF A, Discussion Paper)*
- [C.1] **Tengxiang Zhang**, Nicholas Becker, Yuntao Wang, Yuan Zhou, and Yuanchun Shi. 2017. BitID: Easily Add Battery-Free Wireless Sensors to Everyday Objects. *In 2017 IEEE International Conference on Smart Computing (SMARTCOMP)*, 1–8. *(Best Paper Runner-up)*
- 2013** [J.1] Huifeng Ma, Bengeng Cai, **Tengxiang Zhang**, Yan Yang, Weixiang Jiang, and Tiejun Cui. 2013. Three-Dimensional Gradient-Index Materials and Their Applications in Microwave Lens Antennas. *IEEE Transactions on Antennas and Propagation* 61, 5: 2561–2569.

PATENTS

- 2020** [P.9] **Tengxiang Zhang**, Xin Zeng, Yiqiang Chen. A Smart Ring Based Input Method, System, and Apparatus: CN 202010413596.3 *(pending)*
- [P.8] **Tengxiang Zhang**, Xin Zeng, Yiqiang Chen. A Smart Ring Based Gesture Recognition Method and System: CN 202010411317.X *(pending)*
- [P.7] **Tengxiang Zhang**, Jiayuan Gao, Yiqiang Chen. Apparatus and Method for Cognitive Load Analysis Based on Near-infrared Imaging of Subcutaneous Veins: CN 202010459503.0 *(pending)*
- [P.6] **Tengxiang Zhang**, Jiayuan Gao, Yiqiang Chen. A Movement Symmetry Based Smart Prosthesis Control Method and System: CN 202010425034.0 *(pending)*
- 2018** [P.5] Yuanchun Shi, Yinshuai Zhang, **Tengxiang Zhang**. Smart Ring and its Wearing Method: CN 201810971684.8 *(pending)*
- [P.4] Yuanchun Shi, Yinshuai Zhang, **Tengxiang Zhang**. One type of Smart Ring: CN 201821371671.9 *(pending)*
- [P.3] Yuanchun Shi, Yinshuai Zhang, **Tengxiang Zhang**. Smart Ring: CN 201821371641.8 *(pending)*
- [P.2] Yuanchun Shi, **Tengxiang Zhang**, Xin Yi, Yuntao Wang and Chun Yu. Pairing method and wireless device for pairing using wireless signals. International Patent No. PCT/CN2018/094468.
- [P.1] Yuanchun Shi, **Tengxiang Zhang**, Xin Yi, Yuntao Wang, Chun Yu. An association method and apparatus to pair devices based on wireless signals *(pending)*

HONORS AND AWARDS

2019	Graduate with Honor (CS), Tsinghua University, China
2018	Finalist, Global Innovation Competition'18
2017	Best Paper Runner-up, SMARTCOMP'17
2017	Discussion Paper, UbiComp'17
2012	First Prize, International Mathematical Contest in Modeling

PROFESSIONAL EXPERIENCE

2019-present	Research Assistant Professor, Institute of Computing Technology, Chinese Academy of Sciences, Beijing, China <ul style="list-style-type: none">• Conduct research on ultra-low-power sensors, wearable devices, and distributed interfaces design
2015-2016	RF Engineer/Product Manager, Tomoon Technology, Beijing, China <ul style="list-style-type: none">• Smartwatch and Bluetooth tracker antenna design• Bluetooth tracker product definition, project management, and field deployment
2013-2015	Product and Test Engineer, Silicon Labs, Austin, Texas, USA <ul style="list-style-type: none">• IoT MCU chips (e.g. Sub-GHz、 ZigBee) RF calibration and test• Test program (C/Perl) development, hardware design and layout• Developed on-chip test program that saved over 30% test time for EM357

SERVICES

Reviewer	CHI'20, IMWUT'20, UIST'20, MobileHCI'20, ISS'20, IUT'20, TEI'20,EICS'19
Speaker	GIX 2020 Access Computing Summer Program
Mentor	GIX Winter Camp 2019, Seattle, USA
Volunteer	ACM UBICOMP/ISWC 2018, Singapore; The 4th UN World Urban Forum 2008, Nanjing, China

STUDENT SUPERVISION AND MENTORING

Xin Zeng	UCAS Ph.D (CS). Co-supervising with Prof. Yiqiang Chen
Xinyi Yang	BJTU Undergraduate (CS)
Jiayin Wang	Tsinghua Undergraduate (CS); Now Master at UCLA (CS)
Jiayuan Gao	Tsinghua Undergraduate (CS); Now Ph.D at UCAS (CS)
*Simin Li	Beihang Undergraduate (CS); Now Master at Georgia Tech (CS)
*Zi Qian	Tsinghua Undergraduate (CS); Now Master at U of Toronto (CS)
*Hsuan-Wei Fan	Tsinghua Undergraduate (CS); Now Master at Cornell Tech (CS)
*Hanwei Wang	Tsinghua Undergraduate (Physics); Now Ph.D at UIUC (EE)
*Alumni	

SKILLS

Programming languages:

Python, C, C++, C#, Java, Matlab

Prototyping:

Arduino, Processing, Altium, 3D printing

Software:

Matlab, CST, Keras, Scikit-learn

Hardware:

Signal generator, Vector network analyzer, Spectrum analyzer