Tengxiang Zhang

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I'm an assistant researcher at Pervasive Computing Research Center, Institute of Computing Technology, Chinese Academy of Sciences. My research interests are:
1) Ultra low-power sensing techniques; 2) Wearables interactive devices;
3) Interconnection techniques for 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   Mentor: Prof. Tiejun Cui

PUBLICATIONS

2020   [C.3]   **Tengxiang Zhang**, Xin Zeng, Yinshuai Zhang, Ke Sun, Yuntao Wang, Yiqiang Chen. ThermalRing: Gesture and Tag Inputs Enabled by a Thermal Imaging Smart Ring. *The 2020 CHI Conference on Human Factors in Computing Systems (CCF A, Accepted)*

        [C.2]   Yuntao Wang, Zichao (Tyson) Chen, Hanchuan Li, Zhengyi Cao, **Tengxiang Zhang,** Huiyi Luo, Ke Ou, John Raiti, Chun Yu, Shwetak Patel, Yuanchun Shi. MoveVR: Enabling Multiform Force Feedback in Virtual Reality using Household Cleaning Robot. *The 2020 CHI Conference on Human Factors in Computing Systems (CCF A, Accepted)*

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

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

* Still has 4 years of H1B period for working in the US without lottery

2019-present   **Assistant Researcher, Institute of Computing Technology, Chinese Academy of Sciences, Beijing**
- Conduct research on ultra-low-power sensors, wearable devices, and distributed interfaces design

2015-2016   **RF Engineer/Product Manager, Tomoon Technology, Beijing**
- 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**
- 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/UbiComp'20, MobileHCI'20, IUI'20, TEI'20, EICS'19
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)
Jiayuan Gao   Tsinghua Undergraduate (CS)
Zi Qian   Tsinghua Undergraduate (CS)
Hsuan-Wei Fan   Tsinghua Undergraduate (CS)
Hanwei Wang   Tsinghua Undergraduate (Physics); Now Ph.D student at UIUC (EE)

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