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**
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)*

GRANTS

2019 [I.3] **Principle Investigator**: Ultra-low-power Ubiquitous Touch Interfaces (20K CNY). Open Projects of Beijing Key Laboratory of Mobile Computing and Pervasive Device.

[I.2] **Principle Investigator:** Resources Cross-modality Association and Matching Techniques (1.08 Million CNY), sub-project of Key Technologies for Modern Service Resource Management, National Key Research and Development Plan.

[I.1] **Co-investigator:** Hearing Aid Automatic Fitting Models (0.3 Million CNY), Key Technologies of Proactive Health and Aging Population, National Key Research and Development Plan.

HONORS AND AWARDS

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

PROFESSIONAL EXPERIENCE

Reviewer	CHI2020, IMWUT 2020, IUI 2020, TEI2020, EICS 2019
Mentor	GIX Winter Camp 2019, Seattle, USA
Volunteer	Student Volunteer, ACM UBICOMP/ISWC 2018, Singapore; Student Volunteer, The 4th UN World Urban Forum 2010, Nanjing, China
Semiconductor	2913-2015. RF MCU Product and Test Engineer, Silicon Labs, Austin, Texas, USA
Consumer Electronics	2015-2016. Smart watch RF Engineer/BLE Tracker Product Manager, Tomoon, Beijing, 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:	C, C++, C#, Python, Java, Matlab
Prototyping:	Arduino, Processing, Altium, 3D printing
Software:	Matlab, CST, Keras, Scikit-learn
Hardware:	Signal generator, Vector network analyzer, Spectrum analyzer