Ke Ma

Suta

T +86 18696104494
M suta@tongji.edu.cn
P http://makeinteractions.com/

RESEARCH INTEREST

Intelligent Human-robot interaction, HCI, TUI
CityScope & urban data analysis, community design
Biomedical data visualization, knowledge sharing
AI and computer music, interactive media

EDUCATION

Huazhong University of Science and Technology – 2013 - 2016
Dept. of Informatics Engineering, School of Electronic Information and Communications
Master of Science in Human-computer Interaction

Huazhong University of Science and Technology – 2009 – 2013
Dept. of Informatics Engineering, School of Electronic Information and Communications
Bachelor of Engineering in Electronic and Engineering

WORK EXPERIENCES

Research Liaison – March 2017 - Present
City Science Lab @ Shanghai, a cooperation with MIT Media Lab
_Academic researcher, working with researchers from City Science Group at MIT Media Lab on urban data analysis, CityScopes, and City Science Summit.

Research Assistant – September 2016 - Present
College of Design and Innovation, Tongji University
_Academic researcher, coordinating research projects with Intel labs on adaptive HRI.
_Lecturer, teaching assistant, developing interdisciplinary courses (HRI, HCI, data vis) and special research topics for undergraduates and master students.

CEO – August 2018 - Present
Polaris Technology, Inc., Shanghai, China
_Founder, providing cloud-based high-performance genetic data acceleration, visualization, and analysis tools and services for DNA testing companies.

Senior Instructor – December 2016 - July 2017
Intel-Tongji Co-creation Space, Tongji University
_Instructor, developing curricula guiding makers and college students to transform Intel technical platforms (IoT, Curie, RealSense, ROS) into creative applications.

Research Intern – July 2015 - October 2015
Center for Digital and Innovation, College of Design and Innovation, Tongji University
_researcher, designer, assisting director Xiaohua Sun to enrich Blackbox multi-media space and interactive media performances E: sonic.

Research Assistant – September 2014 - June 2016
Artificial Intelligence and Bioinformatics Lab, School of Electronic Information and Communications, Huazhong University of Science and Technology
_HCI researcher, UX designer in chief, supporting advisor Tian Xia to initiate and implement biomedical knowledge sharing platform, RNN models for music compositions, and various data visualizations for bioinformatics research publications.

R&D Intern – July 2012 - October 2012
Tencent, Shenzhen, China
_Front-end developer, UX designer, developing web apps for social network Qzone.

TEACHING

College of Design and Innovation, Tongji University

Instructor

Designing Intelligent Human-robot Interaction – March 2017 & 2018 - July 2017 & 2018

Urban Data Visualization – March 2018 - May 2018
Co-instructor: Francesca Valsecchi

Sound and Music Computing – November 2015 - Present

Developing Web & Mobile Apps – December 2017 - January 2018

Intel Techniques: Curie and RealSense – September 2017 & 2016 - January 2016 & 2017

Teaching Assistant

Studio i: Design for Smart Life – September 2017 - December 2017

Open-source Hardware & Programming – October 2015 & 2016 - January 2016 & 2017

Selected Workshop

CityScope: Map that Matters – October 2017
High School of Design and Innovation, Tongji University.

CityScope: Aalto University – August 2017
City Science Lab @ Aalto, Aalto University. Instructor: Luis Alonso and Ariel Norman.

Digital Innovation: HCI Paradigms and Techniques – July 2017
Center for Digital and Innovation, College of Design and Innovation, Tongji University.

CityScope: Siping Community – March 2017
City Science Lab @ Shanghai, College of Design and Innovation, Tongji University

PUBLICATIONS

VisShare: A high-performance and cross-platform library for visualizing and publishing large-scale biomedical research data
Ke Ma, & Tian Xia.
submitted to Journal *Nature Methods Correspondence* in peer-review

AI Encountering Interactive Systems: A Deep Learning Reinforced Musical Composition Model
SMC 2018 | 15th Sound and Music Computing Conference
Ke Ma, & Tian Xia. (2018). AI Encountering Interactive Systems: A Deep Learning Reinforced Musical Composition Model. Zenodo. http://doi.org/10.5281/zenodo.1422613

Design pattern as a practical tool for designing interactions connecting human and social robots
IHSI 2019 | International Conference on Intelligent Human Systems Integration
Ke Ma. (2018). Design pattern as a practical tool for designing interactions connecting human and social robots. In Proceedings of the 2nd International Conference on Intelligent Human Systems Integration. (to appear)

Digital Touchpoints in Campus Slow Traffic Service System
AHFE 2017 | International Conference on Applied Human Factors and Ergonomics
Shi J., **Ke Ma.** (2018) Digital Touchpoints in Campus Slow Traffic Service System. In: Stanton N. (eds) Advances in Human Aspects of Transportation. AHFE 2017. Advances in Intelligent Systems and Computing, vol 597. Springer, Cham.

Comparative genetic interaction mapping reveals functional crosstalk between distinct bioprocesses
Dan Chen*, Wei Xu*, Yu Wang, Yongshen Ye, Yue Wang, Miao Yu, Jinghu Gao, Jielin Wei, Yiming Dong, Honghua Zhang, **Ke Ma**, Wenqing Cheng, Shu Wang, Barth D. Grant, Chad L. Myers, Anbing Shi, and Tian Xia.
submitted to Journal in peer-review

Multifactorial deep learning reveals pan-cancer genomic tumor clusters with distinct immunogenomic landscape and response to immunotherapy
Feng Xie, Jianjun Zhang, Jiayin Wang, Alexandre Reuben3, Wei Xu1, Xin Yi, Frederick S. Varn7, Yongsheng Ye, Junwen Cheng, Miao Yu, Yue Wang, Mingchao Xie, Peng Du, **Ke Ma**, Penghui Zhou,

Sheng-li Yang, Yaobing Chen, Guoping Wang, Xuefeng Xia, Zhongxing Liao, John V. Heymach, Ignacio Wistuba, P. Andrew Futreal, Kai Ye, Chao Cheng, Tian Xia.
submitted to Journal in peer-review

EVENTS

City Science Summit 2018, Shanghai
Shanghai, China, 20 May 2018.
Event co-organizer, Speaker. Co-organizers: Ryan Zhang and Margaret Church
A one-day event focused on global service innovations, in participation with Tongji University and the MIT Media Lab's City Science group. The event included 20 talks from Media Lab scientists, members of City Science network, and supporting companies.
Talk title: **Evidence-based community design for NICE 2035 prototype street**

ICOST 2016 | 14th International Conference on Smart Homes and Health Telematics
Wuhan, China, 25-27 May 2016.
Web Chair.

EXHIBITIONS

CityScope Shenzhen Bay
Shenzhen, China, November 23 - December 7 2018.
Curator.
The two-week exhibit demonstrated a novel CityScope to quantify the entrepreneurial vitality of Shenzhen Bay Community and engage stakeholders into intervention design.

MIT Media Lab Pavilion at World Innovation & Entrepreneurship EXPO
Shanghai, China, 19-24 May 2018.
Co-curator. Chief curator: Kent Larson, Yongqi Lou. Co-curator: Ryan Zhang.
The exhibit included three CityScope Andorra, LivingLine, Aalto to demonstrate the collaborative research of the City Science Network and Persuasive Electric Vehicle (PEV).

Tangible Interfaces Course Exhibition for Tongji Design Week
Tongji University, Shanghai, China, October 2016.
Organizer.

E: Sonic: Interactive audio-visual live performance
Minsheng Art Museum, Shanghai, China, 20-30 August 2015.
Shanghai Symphony Hall, Shanghai, China, 10 October 2015.
Interaction designer and liaison.

SKILLS

Language
Fluent in spoken and written in English and Chinese

Design
Design thinking, interaction design, service design, UI/UX, graphics, 2D/3D animation

Programming
HTML5/CSS3, Javascript, D3.js, Web Audio, WebGL, C/C++, Python, Unity

Creative coding
Processing, Max/MSP/Jitter

Robotics
HCR & mobile robot platform,Tensorflow API, OpenPose, OpenCV

Hardware
Arduino, sensors, actuators, Intel Curie/RealSense, digital circuit design, PCB

Deep Learning
RNNs, GRU, Tensorflow, Theano

Biomedical
Genetics, gene expression, genomic variation, cancer cell