MINGRUI ZHANG

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EDUCATION

Ph.D., Information School **2017.9 – Present**
University of Washington, Seattle
Advised by Prof. Jacob O. Wobbrock

BS, Computer Science and Technology **2013.8 – 2017.7**
Department of Computer Science and Technology, Tsinghua University
GPA 91.0 (Rank 13/127)
Minor in Journalism

Visiting Student, the Fluid Interfaces Group **2016.6 – 2016.9**
Media Lab, Massachusetts Institute of Technology
Advised by Prof. Pattie Maes

Exchange Student, Computer Science and Engineering **2015.9 – 2015.12**
The Chinese University of Hong Kong

RESEARCH INTEREST

Human Computer Interaction - Input Method / Touching and Stylus / Natural User Interface

PUBLICATIONS

Yi, X., Yu, C., **Zhang, M.**, Gao, S., Sun, K., & Shi, Y. ATK: Enabling ten-finger freehand typing in air based on 3d hand tracking data. **UIST 2015**

HONORS & AWARDS

Excellent graduate of the CST Department, Tsinghua	**2017**
The National Scholarship of China (Top 1%)	**2016**
1st winner of the National Database Conference Cup	**2016**
Top 4 projects – "Leap Touch", HACK SHANGHAI Hackathon	**2015**
Best note of Youdao Course Note Competition	**2015**
Best watch application award – "Pebble Mario", THACK Hackathon	**2014**

RESEARCH EXPERIENCE

Fluid Interfaces Group, MIT Media Lab **2016.6 – 2016.9**
Visiting Student
Developed hardware and algorithm of the project Fluxa. Lead the project Shoulder Muscle-Computer Interface. Programmed with Myo armband. Signal processing and pattern recognition with EMG.

Multimedia Lab, the Chinese University of Hong Kong **2015.6 – 2015.8**
Research Assistant
Write experimental codes on machine learning, modified the CXXNET (a framework of deep learning) code and revised the convolutional layer of it. The result proved not applicable.

Pervasive Computing Group, Tsinghua University **2014.10 – 2015.4**
Research Assistant
Designed and implemented Air-typing platform. Evaluated different finger-tracking algorithms. Kinect and Leap Motion programming. Edited the demo video.

WORK EXPERIENCE

Momenta.ai Inc. Beijing **2016.12 – 2017.6**
Research Intern
Research on road segmentation. Modify Full Convolutional Network base model on Caffe and PyTorch. Boost recall & accuracy about 5%. Speed up framework from 8fps to 100fps.

MailTime Inc. Beijing **2016.2 – 2016.6**
iOS Intern
Redesigned interaction logic and UI, user tutorial and feedback, increased 25% of the user retention.

Chestnut Tech Inc. Beijing **2014.10 – 2016.1**
Co-founder, iOS Developer
Main developer of "Parocam" application, Face transform algorithm, UI design and product operation

PROJECTS

PAROCAM IOS APP @Chestnut Tech Inc. **2014.11 – 2016.1**
- A funny iOS app transforming images of human faces (such as stretching the mouth) in real time, using multithread face-detection tech based on GPU.
- Developed functions of Chat Bubbles, Video Merge.
- 20,000 downloads in App Store (with overall rating 4+).

SPAM DETECTING ON Q-A COMMUNITY @NDBC CUP'16 **2016.5 – 2016.6**
- Designed a novel approach to detect spam answers in Q-A community.
- Using CNN and Word2Vec, with additional NLP data pre-processing. F-value 66.0%.
- **Win first place in the competition**

FLUXA @Media Lab MIT **2016.6 – 2016.9**
- Fluxa is a wearable LED device that utilizes POV (Persistence of Vision). When waving hands with Fluxa, an image or text can be seen. The device is designed to fortify social interaction and augment body movement.
- Improved display algorithm in Arduino.
- **Our project is accepted by UIST'16 Demo Session.**

VOICE++ DIGITAL DESIGN PROJECT **2015.5 – 2015.6**
- A hardware project that can recognize one's voiceprint.
- Recognizing algorithm(MFCC) in Verilog. WM8731 Chip Programming. Audio receiving and Voice vector matching Algorithm.
- Accuracy: 90% in two people, 75% in three people. A demo on YouTube is available (search VOICE++).

PERSPECTIVE TRACKING VIDEO CHATTING GRADUATION PROJECT **2017.1 – 2017.6**
- Video Communication system supporting perspective tracking to imitate face-to-face scenario
- Head tracking, panorama camera used to capture First-person view on the remote side. Made with Unity.

KEYNOTES AND PRESENTATIONS

Momenta.ai
"GANs Family", Intro to Generative Adversarial Networks, Beijing **2017.3**

TEACHING

Teaching Assistant
INFO 360 Design Thinking, UW Seattle **2017 Fall**

PRESS COVERAGE

NEXT 36Kr(2015) "Product of the day - Parocam"

Youdao(2015) "Winner of Youdao Course Note Competition"

SKILLS

Programming
C/C++/C#/JavaScript/MATLAB/Objective-C/Python

Journalism
Chinese writing/Interview

Art & Media
Adobe Photoshop/Adobe Premiere/Final Cut Pro