

Kai 'Kay' Wu

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RESEARCH INTERESTS

- Hand gesture recognition and its application in HCI domain
- Content-based recognition and similarity retrieval from large database
- Intelligent system and robotics

EDUCATION

B.E in Electronic Engineering, BUPT (211 Univeristy) **Sep. 2010 - Jul. 2014 (expected)**

- **Department:** School of Electronic Engineering, School of Peida-Ye [1]
- **Cumulative GPA:** 3.58/4 (Cumulative GPA of Peking University)
- **Average Score:** 86.4/100
- **Standard Tests:** GRE: 328(V 158, Q 170) AW 4
TOEFL: 106(Reading 29, Listening 26, Speaking 22, Writing 29)

RESEARCH AND PUBLICATION

Real-time Hand Extraction and Recognition for Wearable Devices **Sep. 2013 - Present**
Research Intern in Institute of Microelectronics, Tsinghua University

- Proposed 6 categories of hand gestures and established a class of templates to classify and recognize the input gestures.
- Reviewed the literature for algorithms of hand gesture recognition and proposed one for the real-time scenario.
- Developing an algorithm to accurately recognize hand gestures using a novel distance metric called EMD (Earth Mover's Distance) and a less complex, yet relatively robust one for real-time application.
- Working on a paper regarding the topic of hand gestures extraction and recognition algorithm for potential publication.

PROJECTS

Classroom Seats Inquiry System (Course project of Embedded System Design class)

Mar. 2013 - May. 2013

Designed to help students find available seats by real-time recording number of people with sensors, updating data on server via wireless network, and fetching data with a mobile app.

- Independently developed a mobile app, established a database server for the app & hardware to fetch/update data.
- Worked on presentation materials from scratch, successfully made a presentation to the class.
- Github Repository:

[1]. Department instituted to nature talented students in telecommunication and electronic engineering, named after the honorary president, expert in microwave and optical communication, Mr. Peida Ye.

Wi-Fi Based Classroom Interaction System

Sep. 2012 - May. 2013

Developed to strengthen the interaction between lecturers and students. Consists of a mobile app and a PC program. Send answers and questions using the app via wi-fi, dynamically display and analyze students' performance on PC. No web server or database whatsoever needed. Won **second place** in the award - *The Most Popular Exhibits* - voted by students. Currently is being used.

- Independently developed the software system (mobile app & PC program), co-designed UI, primary presenter of the exhibit.
- Made a presentation to students from a top high school (Invited by The High School Affiliated to Renmin University of China).
- Github Repository: <https://github.com/imkaywu/PC-program/>
<https://github.com/imkaywu/Clicker/>

Musical Robot

Sep. 2011 - May. 2012

This robot is a member of a musical robot band in which each member is capable of playing one instrument. Ours can play violin as well as practice Tai Chi.

- Developed C++ programs to run on Windows CE platform to make the robot practice Tai Chi.

HONORS & CONTESTS

Scholarships:

Second-class scholarship of BUPT

Oct. 2011, 2012, 2013

National Undergraduate Electronic Design

Sep. 2013

A national contest for circuit design and embedded system development which held every 2 years. The development platforms used included SCMs and Xilinx FPGA Spartan 6.

- Recipient of **Second Prize** in Beijing Contest District among 457 teams.
- Skilled in coding for SCM & FPGA (Serial Communication, ADC/DAC, Keyboard, LCD display, etc.). Solid knowledge of HDL.

CUMCM, MCM

Sep. 2012, Feb. 2013

Topics: Evaluation of Wine (CUMCM), The Ultimate Brownie Pan (MCM).

- Wrote MATLAB codes to solve all models, constructed models to solve layout problem in MCM, English essay writing & polishing.
- Recipient of **Successful Participant** in both contests.

COMPUTER SKILLS

Development

- Proficient: C, Java (Swing), Verilog, MATLAB
- Familiar: Java (Socket, multi-thread), Android, C++, PHP, MySQL

Tools: MATLAB, ISE, Quartus, WinCE 6.0+Microsoft VS2005, Eclipse (ADT plugin), Vim