

## Yang, Luxin

(86)18511849107 yangluxin2016@hotmail.com

Room 207A, Zijing 4#, Tsinghua University, Beijing, 100084, P.R.China

### Education

---

**Tsinghua University**, Beijing, China

Aug 2012-Jul 2016

Department of Electronic Engineering, Bachelor of Engineering

**GPA:** 3.73/4.0    **Ranking:** Top 10 in female students

**Core Coursework:** Computer Program Design (92) / Experiment of Electronic Circuits & systems (92) / Advanced Matlab Programming and Its Application (91) / Digital Image Processing (92) / Fundamentals of Computer Graphics (90) / Media and Cognition (Focused on machine learning algorithms) / Data and Algorithm

**University of Tokyo**, Tokyo, Japan

Oct 2014-Feb 2015

Department of Electrical Engineering, Exchange Student

**Coursework:** Introduction to Quantum and Statistical Mechanics (A) / Wireless communication and mobile computing / Information and communication theory

**University of California, Berkeley**, California, USA

Jul 2015-Sept 2015

Department of Electrical Engineering and Computer Science, Summer Exchange Researcher

### Publications & Patents

---

1. **Yang L**, Chen R. 3D hearing with loudspeaker array around pinna[C]//INTER-NOISE and NOISE-CON Congress and Conference Proceedings. Institute of Noise Control Engineering, 2015, 250(5): 2006-2011.
2. **Luxin Yang, Ying Xiao**, Yingxin Liu. "Dual Directional Spatial Spiral Microphone Array", *Chinese Patent* (ZL201310006605.7), Oct 2014
3. **Luxin Yang**, Benchao Zhu, Lizhi Yu. "Block Detachable Sensor Array without Floating Cables", *Chinese Patent*, (ZL201310008062.2), Sep 2014

### Research Experiences

---

**Vision Correcting Light Field Display Based on Inverse Blurring** | Research Assistant

*Computing Vision Lab, University of California, Berkeley*

Advisor: Professor Brian A. Barsky

July 2015-Present

- Developed an optimized vision-correction light field algorithm based on forward mapping and bilinear interpolation, which enabled a higher quality and computation speed compared to the latest algorithm reported in *SIGGRAPH 2014*;
- Improved the novel hardware design by using microlens arrays to replace a pinhole mask for higher brightness and contributed to building a prototype with the proposed algorithm and hardware;
- Developed an IOS application by using objective-C, which enabled real-time image generation and display on mobile devices.

**Key Laboratory of Noise and Vibration Research, Institute of Acoustics, Chinese Academy of Sciences**

Research Assistant | Advisor: Professor Xiaodong Li

Oct 2012-Present

**Project I: 3-D Sound Recording & Spatial Hearing based on Dual Ring-like Ear-Microphone & Ear-Speaker Arrays**

- Derived a transfer model from sound source to human ears using Snowman Model;
- Reconstructed the sound field at ear canal through loudspeaker arrays using spherical harmonics theory;
- Fabricated verification platform of dual ring-like ear-speaker arrays and conducted evaluative experiments.

### **Project II: Acoustic Imaging System Hardware Construction**

- Built the acoustic imaging system by using a dual directional spatial spiral microphone array;
- Enabled the system to form a representation of the location of the sound sources and overlay the acoustic image to the real color image.

### **Video-based Abnormal Event Detection in Crowd Scenes | Research Assistant**

#### ***Center of Intelligent Image and Document Information Processing, Tsinghua University***

Advisor: Professor Shengjin Wang

Mar 2015-June 2015

- Conducted literature research on the development of anomaly detection in crowds and the processing methodologies commonly used;
- Conducted abnormal event modeling and developed an improved algorithm which enhances the event detection accuracy by ~10%.

### **Anime-like Exaggeration of Live-action Image based on Kinect | Research Assistant**

#### ***Department of Information and Communication, University of Tokyo, Japan***

Advisor: Professor Takeshi Naemura

Oct 2014-Feb 2015

- Developed a system of perspective exaggeration for live-action video in real-time;
- Used human skeleton structures and depth information from Kinect for Windows v2;
- Synthesized an image from a pseudo camera in a closer position and combined it w/ the original color image;
- Collected system evaluations from 300 users and analyzed its potential application to digital signage.

## ***Selected Course Project***

### **Sub-blocked Image Recognition and Matching based on PCA (Principal Component Analysis)**

#### ***Department of Electronic Engineering, Tsinghua University***

Jul 2014-Sep 2014

Advisor: Professor Yuantao Gu

- Developed an image processing algorithm with functions including blocking the original image, obtaining the feature of each block by PCA, and deleting a pair of blocks that are matching as well as linkable;
- Implemented the algorithm in Matlab and demonstrated excellent performance in accuracy and speed;
- Ranked in the Top 3 final course project evaluations.

## ***Awards and Honors***

- |  |      |
|--|------|
| ◦ Study Improvement Scholarship in Dept. of Electronic Eng., Tsinghua (Top 10%)  | 2015 |
| ◦ Outstanding Undergraduate Scholarship, China Scholarship Council (Top 5%)      | 2014 |
| ◦ Leader Volunteer Award, The 21th International Congress on Sound and Vibration | 2014 |

## ***Skills & Volunteer Activities***

- Programming and professional software: Adept in C++/C, MATLAB, Verilog, Assembly, Linux, LaTeX
- Simulation software: Modelsim, Multisim, Xilinx, FPGA, Altium designer, Solid work
- **GRE:** V153 Q167 AW3.0 (Dec 6, 2015) **TOEFL:** 108 (Reading 29 Listening 28 Speaking 26 Writing 25, Nov 15, 2015) Fluent in **Japanese**, Past N1 of Japanese-Language Proficiency Test (JLPT)
- Level 10, Piano Grading Test of Chinese Musicians Association (Highest level for amateur pianist)
- Designed, fabricated and distributed over 1000 Biosand Filters to help villagers in Mahuangshan, Ningxia to maintain healthy drinking water. RISE, Tsinghua.

2012

**Interests:** Travel (have traveled overseas to over 5 countries), softball, swimming, photography