

# Yanzhe Yang

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Objective: Ph.D. in Computer Science

## ***EDUCATION***

School of Software, Tsinghua University (THU), Beijing, China 2012.8 - 2016.6(*Expected*)

Bachelor of Computer Software

**Overall GPA:** 91.0/100 **Ranking:** 7/63 Top 2 in all female students

**Third-year GPA:** 94.8/100 **Ranking:** 4/63 Top 1 in all female students

**Core Courses:** System Analysis and Control (100, Top 1), Network System (1) (95),  
Architecture of Computer and Network (93, Top 6), Web Front-end Technology (100, Top 1),  
Computer System Software (2) (database, 99, Top 3), Software Engineering (3) (94, Top 5)  
Functional Programming (Haskell, 96), Practice of Programming(C#, 97).

Department of Electrical and Computer Engineering, McGill University, Montreal, Canada

Summer Exchange Researcher in Prof. Jeremy R. Cooperstock's group 2015.6-2015.9

## ***RESEARCH EXPERIENCE***

Research Assistant (RA) in the Institute of CAD&CG, Tsinghua University, P.R China

Advisor: Associate Professor Bin Wang

**Temporal Coherent Video Segmentation with SVM and Graph Cut** 2014.05 - present

- Achieved a stable segmentation result on boundary consistency, based on the SVM training and the segmentation result of the first video frame by Mean Shift.
- Implemented low-level feature extraction of images, such as variance and color, which enhanced the segmentation accuracy and robustness.
- Improved the recognition of pattern repeated objects, such as zebra, by using the method of point-wise mutual information which was often used in the area of word association.

Research Assistant (RA) in the Centre for Intelligent Machine, McGill University, Canada

Advisor: Associate Professor Jeremy R. Cooperstock

**Enhanced Remote Viewing Capability from a Camera Array** 2015.06 - 2015.09

- Used the method of IBR (Image Based Rendering) for interpolation, which enabled much higher system efficiency: only 5 cameras are needed for telepresence rather than the spherical dense camera array required in conventional systems.
- Captured the hand motion with OptiTrack (five V100R2 cameras) and developed a system of natural interaction by handling the motion data.
- Built a system of live **mobile telepresence**, which can be applied in medical surgery training, remote dancing show and emergency surgery and so on.

Institute of Information System and Engineering, School of Software, Tsinghua University

Advisor: Associate Professor Xiaoming Jin

## **Image Retrieval by Content**

2014.03 - 2014.05

- Analyzed and implemented several algorithms on image features extraction, including SIFT, Gabor Wavelet, color hologram and etc.
- Clustered images based on Artificial Neural Network and proved that higher-level feature of imaged was learned by ANN.
- Conducted experiments on different combinations of feature types and weights, then obtained a feature extraction accuracy of 60%.
- Implemented the R Tree for high efficiency on retrieval and found the nearest 10 images.

Student Research Training in the Institute of Trustworthy Network and Systems

Advisor: Researcher Hehua Zhang

## **Domain Specific Language Design Based on Arduino**

2013.09-2014.03

- Developed an algorithm on Arduino to make the car run automatically, on 8 complex routes respectively, with infrared sensors.
- Built a system of graphical code generating platform which enabled children to use it.
- Designed the domain specific language for Arduino with method from up to down

## **PUBLICATION**

1. Yanzhe Yang, Stephen Carter, Gregory Rohlicek, Jeremy R. Cooperstock, Bin Wang  
"Enhanced Mobile Telepresence Based on a Camera Array", to be submitted to CHI 2017
2. Yanzhe Yang, Kanglai Qian, Bin Wang  
"Temporal Coherent Video Segmentation with SVM and Graph Cut", to be submitted to CVPR 2016
3. Yanzhe Yang, Feng Tian, "The Tides of Satellites - Applications to the Internal Research",  
Student Journal of Tsinghua University, Volume 6 Issue 1, 2014, published

## **HONOR**

- Excellent Student Leader in Tsinghua University(3/240) Oct. 2015
- National Scholarship (highest scholarship for Chinese undergraduate) Oct. 2015
- Best Experiment Award on Computer Network System(6/60) May 2015
- Academic Excellence Scholarship(7/60) Dec. 2014
- Zhang Mingwei Comprehensive Scholarship Dec. 2013
- Second prize in 33rd National Undergraduate Physics Competition Dec. 2013
- First prize in 28th Chinese Physics Olympiad Sept. 2011

## **STRENGTH**

English **IELTS 7.0/9.0** Listening 7.5 Reading 8.0 Speaking 6.0 Writing 6.0  
Programming Proficient in C++, C, JAVA, OptiTrack