

# Yu Du

github.com/answeror | answeror@gmail.com | +86 15068849109 | Hangzhou, China

## EDUCATION

### ZHEJIANG UNIVERSITY

Ph.D. in Computer Science  
State Key Lab of CAD&CG  
2011 - Present | Hangzhou, China  
Expected to graduate in Mar 2017

### EAST CHINA UNIVERSITY OF SCI AND TECH

B.S. in Computer Science  
2007 - 2011 | Shanghai, China  
Cum. GPA: 3.6 / 4.0  
Major GPA: 3.8 / 4.0  
Ranking: 1<sup>st</sup>/252

## SKILLS

### Programming

Over 100k lines:  
C/C++ • Python  
Under 100k lines:  
Matlab • C# • Java • Javascript

### Machine Learning

Convolutional Neural Networks  
Recurrent Neural Networks  
Classical (K-means, PCA, SVM, etc.)  
MxNet • Caffe • OpenCV

### Vision & Graphics

3D Human Pose Estimation  
3D Skeleton Animation  
Surveillance Video Analysis  
Semantic Image Segmentation  
Face Detection

### Sensors

Signal processing and analysis of  
accelerometer, magnetic sensor and  
gyroscope

### Platforms

Linux • Windows • Android (NDK)

### Tools

Git • CMake • Docker • CUDA  
Google Test • Boost • VIM

## PATENTS

Human Pose Estimation:  
CN105631861A

Gesture Recognition:  
CN105608432A  
CN105654037A  
CN105426842A  
CN105446484A

## EXPERIENCE

### NATIONAL UNIVERSITY OF SINGAPORE | Intern

Jun 2014 - Sep 2014 | Singapore

- Solely developed a video synopsis system which condenses days of surveillance video into a short summary video.
- Improved the quality and optimized the storage of foreground extraction.
- Website: [sesame.comp.nus.edu.sg/project/application#369](http://sesame.comp.nus.edu.sg/project/application#369)

## PROJECTS

### MOTION CAPTURE WITH MONOCULAR CAM | Lead Developer

Oct 2015 - Apr 2016 | Zhejiang University & National University of Singapore

- Solely developed a system that accurately estimates 3D full-body human poses from monocular RGB images.

### GESTURE RECOGNITION WITH SEMG | Lead Developer

Nov 2014 - Present | Zhejiang University

- Led the development of a **real-time** gesture recognition system based on surface electromyography, which recognizes 8 finger gestures and 30 hand gestures of Chinese sign language with an **accuracy of 99%**.
- Implemented Locally-Connected Layer in MxNet and Caffe with cuBLAS.
- **Contributed 5 Pull Requests to MxNet**, a deep learning framework: 4 bugfixes (PR 2366, etc.) and a Deep Residual Network example (PR 2046).

### CONTEXT-AWARENESS ON MOBILE PHONE | Lead Developer

Mar 2013 - Jun 2014 | Zhejiang University & Huawei Technologies Co. Ltd

- Led the development of a context-awareness system on mobile phone with front camera, accelerometer, magnetic sensor and gyroscope.
- Optimized the part-base model on mobile phone to detect face and estimate face pose in real-time.
- Improved the recognition accuracy of walking, running and falling down to **95%** with hierarchical classification.

### ACTION RECOGNITION WITH SENSORS | Lead Developer

Sep 2011 - Jun 2016 | Zhejiang University

- Led the development of a real-time motion capture and action recognition system with wearable accelerometer, magnetic sensor and gyroscope.

## AWARDS

2009, 2010	Two silver medals of ACM/ICPC Asia regional
2010	2 <sup>nd</sup> prize of China Undergraduate Mathematical Contest in Modeling
2009 - 2011	First-class scholarship of three years
2010	Scholarship of Shanghai Chemical Industry Park
2011	Outstanding B.S. Thesis

## PUBLICATIONS

- [1] Du, Y. *et al.* Marker-less 3D human motion capture with monocular image sequence and height-maps. *ECCV* (2016).
- [2] Du, Y. *et al.* CapgMyo: a high density surface electromyography database for gesture recognition. *Nature Scientific Data* (under review).
- [3] Geng, W., Du, Y. *et al.* Gesture recognition by instantaneous surface EMG images. *Nature Scientific Reports* (under review).