

Yu Du

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EDUCATION

ZHEJIANG UNIVERSITY

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

Research Topics:

Vision-based Motion Capture
EMG-based Gesture Recognition

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: 1st/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 ML Methods
MxNet • Caffe • OpenCV

Vision & Graphics

Vision and IMU-based MoCap
3D Skeleton Animation
Surveillance Video Analysis

Sensors

IMU, Surface EMG

Platforms

Linux • Windows • Android (NDK)

Tools

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

PATENTS

Motion Capture
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.
- Homepage: sesame.comp.nus.edu.sg/project/application#369
- Featured by newspaper: www.todayonline.com/print/1250166

PROJECTS

MOTION CAPTURE BY 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 BY SURFACE EMG | Lead Developer

Nov 2014 - Present | Zhejiang University

- Led the development of a **real-time** gesture recognition system based on surface EMG, achieved state-of-the-art results on the recognition of 52 gestures in NinaPro dataset and 27 gestures in CSL-HDEMG dataset by the end of 2016.
- Optimized Locally-Connected Layer in MxNet and Caffe with cuBLAS.
- **Contributed 6 Pull Requests to MxNet**, a deep learning framework: 5 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 and IMU.
- Developed part-based face detector on Android.

ACTION RECOGNITION BY IMU | Lead Developer

Sep 2011 - Jun 2016 | Zhejiang University

- Led the development of a real-time motion capture and action recognition system with wearable IMU.

AWARDS

- | | |
|-------------|-------------------------------------------------------------------------------|
| 2009, 2010 | Two silver medals of ACM/ICPC Asia regional |
| 2010 | 2 nd prize of China Undergraduate Mathematical Contest in Modeling |
| 2009 - 2011 | First-class scholarships 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] Geng, W., Du, Y. *et al.* Gesture recognition by instantaneous surface EMG images. *Nature Scientific Reports* (2016).
- [3] Du, Y. *et al.* Surface EMG-based inter-session gesture recognition enhanced by deep domain adaptation. *Sensors* (under review).