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 Gestue 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, 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 7 Pull Requests to MxNet**, a deep learning framework: 6 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	2nd 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*** (2017).

[4] Du, Y. *et al.* Semi-supervised learning for surface EMG-based gesture recognition. ***IJCAI*** (2017).