YU DU

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SKILLS

- Rich experience of software development: developed various systems about Computer Vision, Deep Learning and Motion Sensors with C++ and Python on Windows, Linux (PC and HPC) and Android platforms;
- Quick learning and problem-solving ability: started two new research projects on June 2014 and October 2015 respectively, and achieved excellent results under time constraints.
- Teamwork capability: worked as lead developer in 5 research projects and contributed to opensource projects.

EDUCATION

Ph.D., Zhejiang University, Computer Science, State Key Lab of CAD&CG 2011 - Present
Research Area: Deep Learning, Computer Vision, Sensor-based Action Recognition

B.S., East China University of Science and Technology, Computer Science 2007 - 2011
Ranking 1/252

HONORS

- Two silver medals of ACM International Collegiate Programming Contest (ACM/ICPC) Asia regional
- National second prize of China Undergraduate Mathematical Contest in Modeling
- First-class scholarship (2009, 2010 and 2011)
- Scholarship of Shanghai Chemical Industry Park (2010)
- Outstanding B.S. Thesis

EXPERIENCE

Marker-less 3D Human Motion Capture with Monocular Camera October 2015 - April 2016
Lead Developer Zhejiang University, National University of Singapore

Paper: ECCV 2016. Yu Du, et al. "Marker-less 3D Human Motion Capture with Monocular Image Sequence and Height-Maps".
Patent: CN105631861A
Skills: Matlab, Caffe, GPU Cluster

Gesture Recognition Based on Surface Electromyography (sEMG) November 2014 - Present
Lead Developer Zhejiang University

We developed a real-time gesture recognition system which recognize 8 finger gestures and 30 hand gestures of Chinese sign language with an **accuracy of 99% in 50 ms**. This system uses a Deep Convolutional Network with our newly developed 128 channels high density sEMG acquisition device worn on forearm.

Contributed 5 Pull Requests to MxNet, a deep learning framework

- 4 bugfix, including one fatal bug (PR 2366)
- Deep Residual Network example (PR 2046)

Paper: Nature Scientific Reports (under review). W Geng, **Yu Du**, et al. "Gesture recognition by instantaneous surface EMG images".
Patent: CN105608432A, CN105654037A, CN105426842A, CN105446484A
Skills: C++, Python, MxNet, Caffe, CUDA, Qt, OpenCV, Scikit-learn, Docker, GPU Cluster

Video Synopsis for Surveillance June 2014 - September 2014

Lead Developer (Intern) National University of Singapore

We developed a video synopsis system which provides a short video representation while preserving the essential activities of the original video. The activity in the original video is condensed into a shorter period by simultaneously showing multiple activities, even when each activity originally occurred at different temporal space.

Home page: `http://sesame.comp.nus.edu.sg/project/application#369`

Skills: C++, OpenCV

Context-Awareness on Mobile Devices March 2013 - June 2014

Lead Developer Zhejiang University, Huawei Technologies Co. Ltd

Context-awareness on mobile devices with front camera, accelerometer, magnetic sensor and gyroscope. The contexts include reading, walking, running, driving and falling down. The recognition accuracy of walking, running and falling down is 95%. The accuracy of driver verification is 75%.

Patent CN104463201A

Skills C++, Python, Android NDK, OpenCV, Qt, Scikit-learn

Action Recognition based on Motion Sensors September 2011 - June 2016

Lead Developer Zhejiang University

We developed a real-time motion capture and action recognition system based on wearable accelerometer, magnetic sensor and gyroscope. This system can recognize 7 upper-body actions.

Skills C++, OGRE 3D