

GUO, Yu

CONTACT INFORMATION

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CURRENT POSITION& INTERESTS

Institute for Media Innovation (IMI) @ NTU **Singapore**
Research Associate
Supervisor: [Prof. Cham Tat-Jen](#) (NTU)
Collaborators: [Dr. Pierre-Yves Laffont](#) (ETH Zürich), [Dr. Tobias Martin](#) (ETH Zürich)
Interests: Computer Graphics, Computer Vision, GPGPU

EDUCATION

University of Chinese Academy of Sciences (UCAS) **Beijing & Shenzhen, China**
M.E. in Computer Science **Sept. 2010 – Jul. 2013**

- Thesis: GPU-based Soft Body Deformation with Nonlinear Finite Element Method.
- Advisor: [Prof. Heng Pheng-Ann](#) (CUHK)
- Major courses: Combinatorial Mathematics; Matrix Analysis; Stochastic Process; Computer Aided Geometric Design; Computer Graphics; Computer Vision; Visualization.

Central South University (CSU) **Changsha, China**
B.S. in Mathematics and Applied Mathematics **Sept. 2006 – Jul. 2010**

- Thesis: Forces Distribution with Fractal Theory in High Velocity Compaction Technology
- Advisor: Prof. Zheng Zhoushun (CSU)
- Major courses: Mathematical Analysis; Linear Algebra; Spatial and Analytical Geometry; Real Analysis & Functional Analysis; Modern Algebra; Topology; Partial Differential Equation; Optimal Theory.

PUBLICATIONS

Derric Eng, Belle Yick, **Yu Guo**, Hong Xu, Miriam Reiner, Tat-Jen Cham, Annabel Chen. “**Holistic and featural processing for 2D and 3D face recognition**”. *The 11th Asia-Pacific Conference on Vision (APCV 2015)*, Singapore, July 10-12, 2015

Ping Liu, Lin Shi, Defeng Wang, **Yu Guo**, Jianying Li, Jing Qin, Pheng-Ann Heng. “**GPU Accelerated CBCT Reconstruction from Few Views with SART and TV Regularization**”. *The Sixth International Workshop on High Performance Computing for Biomedical Image Analysis (HPC-MICCAI 2013)*, Nagoya, Japan, Sep.22-26, 2013

Jiang Guo, Jun Cheng, Jianxin Pang, **Yu Guo**. “**Real-time Hand Detection Based on Multi-stage HOG-SVM Classifier**”. *2013 IEEE International Conference on Image Processing (ICIP 2013)*, Melbourne, Australia, Sep.15-18, 2013

Yu Guo, Jianying Li, Ping Liu, Qiong Wang, Jing Qin. “**A GPU-Accelerated Finite Element Solver for Simulation of Soft-Body Deformation**”. *2013 IEEE International Conference on Information and Automation (ICIA 2013)*, Yinchuan, China, Aug.26-28, 2013

Yu Guo, Jing Qin. “**A Survey on Simulation of Soft Tissue Deformation in Virtual Surgery**”(In Chinese). *Journal of Integration Technology*, 2013

Yu Guo. “Fall over or Sliding down?” *ACM SIGGRAPH Asia 2012, Poster*, Singapore, Nov.28-Dec.1, 2012

Jianying Li, **Yu Guo**, Heye Zhang, Yongming Xie. “**A Master-Slave Robotic Simulator Based on GPUDirect**”. *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2012)*, Vilamoura, Algarve, Portugal, Oct.7-12, 2012

RESEARCH
EXPERIENCES

Institute for Media Innovation (IMI) @ NTU **Singapore**

Project in BeingThere Centre, (BTC-NTU & BTC-ETH) **Oct. 2013 – May 2014**

- Physical-based video manipulating; Video segmentation (foreground subtraction); Multi-view 3D reconstruction (structure from motion); 3D pose estimation.
- Collaborators: [Dr. Jean-Charles Bazin](#) (Disney Zürich), [Dr. Tobias Martin](#) (ETH Zürich), [Dr. Claudia Kuster](#) (ETH Zürich)

Project in BeingThere Centre, (BTC-NTU & HSS-NTU) **Dec. 2013 – Dec. 2014**

- 2D and stereo face rendering
- Collaborators: [Prof. Miriam Reiner](#) (Technion), [Dr. Belle Yee Ying Yick](#) (NTU)

**Shenzhen Institutes of Advanced Technology (SIAT),
Chinese Academy of Sciences (CAS)** **Shenzhen, China**

Research project related to thesis **Sept. 2011 – Jul. 2013**

- Soft body deformation; Mesh simplification; Delaunay tetrahedralization; Loop subdivision; Displacement mapping using GLSL; Finite Element Analysis; CUDA implementation; 6 DOF haptic device.

Project granted by Shenzhen government **Aug. 2012 – Feb. 2013**

- Using CUDA to accelerate 3D Cone-Beam CT reconstruction with simultaneous algebraic reconstruction technique (SART).

Central South University (CSU) **Changsha, China**

Project leader in National University Student Innovation Program. **Sept. 2008 – Dec. 2009**

- Calculation of fractal dimension, visualization of fractal graphics, and simulation of force distribution in High Velocity Compaction.

HONOURS &
AWARDS

2nd class prize in 4th ACM CSU Collegiate Programming Contest.	CSU, China	2010
1st class prize in 3rd CSU Mathematical Contest in Modeling.	CSU, China	2008
1st class prize in National High School Student Mathematics Competition.	China	2005

PROFESSIONAL
ACTIVITIES

Membership
ACM SIGGRAPH Asia 2011/2012/2013 (student) member

SKILLS

Programming Tools: Visual Studio C/C++, CUDA, MATLAB
Computer Graphics: OpenGL (glut/glew), GLSL, Meshlab
Computer Vision: OpenCV, visual SFM, Kinect, Faceshift
Others: MS Office, L^AT_EX