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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, LaTeX