PENGBIN TANG

No.149 Yanchang Rd, Zhabei District ◇ Shanghai, China, 200072
(+86) · 186 · 2159 · 8850 ◇ tangpengbin@gmail.com

OBJECTIVE AND PERSONAL PROFILE

Pengbin Tang is applying the Phd in Computer Science for his doctoral studies that he is eager to acquire cutting-edge expertise in computer graphics in general and physically-based simulation in particular. He received M.Eng. degree from Shanghai University, P.R.China, under the supervision of Prof. Youdong Ding and Dr. Dongjin Huang. His research interest is computer graphics, especially in physically-based simulations and virtual surgery.

EDUCATION

Shanghai University, Shanghai
• M.S. in Digital Media Technology *Sept. 2014 - Apr. 2017*
2017 Excellent graduate of Shanghai University(Top %6)
2014, 2015 and 2016 First-class academic scholarship (Generally top %9 for every year)
2015-2016 outstanding student of Shanghai university(Top %7)
2016 second-class of GuangHua scholarship
Cumulative average score: 88.14/100, Rank 1/5
• B.S. in Film & TV Arts and Technology(Digital Media Technology) *Sept. 2010 - Jul. 2014*
2013 First-class Shanghai university extra-curricular science and technology works competition
2013 Unremitting self-improvement scholarship of Shanghai university
Obtained admission of exam-exempted postgraduate qualifications with the first overall grade(1/59)
Cumulative GPA: 3.48/4.0, Rank: 2/59

SKILLS

• Mathematical modeling and Numerical methods
• Proficiency in several programming languages, primarily with C/C++, but also with Matlab, Java and Python, and skillful at algorithm design and implementation
• Proficiency in CUDA, OpenGL, OpenCV etc. computer graphics and vision libraries
• Proficiency in hardware design and embedded development
• Strong communication skills, problem solving abilities and creativity
• Well research ability and paper written ability

PROJECTS AND EXPERIENCES

• **Natural Science Foundation of China(No.61402278) : Guidewire dynamics interaction research based on adaptive precision cosserat elastic rod** Jan. 2015 - Dec. 2017
Main Participant

· Investigated and proposed the multi-fluid model, relevant angiography simulation algorithm and an add-on syringe force feedback hardware in minimally invasive surgery and written the research paper.
· Proposed a novel path planning method for minimally invasive diagnosis in medical images and written the research paper.

• **Shanghai Natural Science Foundation(No.14ZR1415800) : Research on flexible multi-body dynamic based guidewire and vascular interactive simulation** Jul. 2014 - Jun. 2017
Main Participant

· Investigated and proposed the membrane physical model, fast collision handling algorithm for angioplasty simulation in minimally invasive surgery and written corresponding research paper.

• **Shanghai Committee of Science and Technology(No.14511108400) : China's precious historical video digital restoration platform** Sept. 2014 - Jun. 2016
Main Participant

· Responsible for the framework of restoration system.
· Restoration the missing frame of the video by the optical flow interpolation algorithm.

• **Presented and reported in international conference**

· Given a paper speech of "Position Based Balloon Angioplasty" in the 15th ACM SIGGRAPH Conference on Virtual-Reality Continuum and Its Applications in Industry(VRCAI). Dec. 2016, Zhuhai
· Made a paper speech of "Real-Time Simulation of Contrast Media Diffusion Based on GPU" in 2015 International Conference on Virtual Reality and Visualization(ICVRV). Oct. 2015, Xiamen
· Given a paper speech of "Modeling and Simulation of Multi-frictional Interaction Between Guidewire and Vasculature" in 2015 International Conference on Image and Graphics(ICIG). Aug. 2015, Tianjin

PUBLICATIONS AND PATENTS

1. **Position Based Balloon Angioplasty**
   Proceedings of the 15th ACM SIGGRAPH Conference on Virtual-Reality Continuum and Its Applications in Industry(VRCAI), Volume 1. ACM, 2016: 391-400.
   Co-author: Wen Tang(Prof., University of Bournemouth,UK), Youdong Ding(Prof., Shanghai University), Dongjin Huang(Dr., Shanghai University) etc.

2. **Development of 3D Interactive Virtual Angiography for Medical Training**
   Manuscript submitted to Computer Methods and Programs in Biomedicine(CMPB)
   Co-author: Dongjin Huang, Youdong Ding, Wen Tang etc.

3. **Computer-Assisted Path Planning for Minimally Invasive Vascular Surgery**
   Accepted by Chinese Journal of Electronics(Presented at CAD/Graphics 2017)
   Co-author: Dongjin Huang, Yin Wang, Wen Tang etc.

4. **Real-Time Simulation of Contrast Media Diffusion Based on GPU**
   2015 International Conference on Virtual Reality and Visualization (ICVRV), pp. 286-289, 2015.
   Co-author: Dongjin Huang, Youdong Ding and Wen Tang etc.

5. **Modeling and Simulation of Multi-frictional Interaction Between Guidewire and Vasculature**
   International Conference on Image and Graphics (ICIG), pp. 524-537, 2015.
   Co-author: Dongjin Huang, Wen Tang, Youdong Ding etc.

6. **Fast generating algorithm of interest roaming path based on freehand sketch**
   Journal of System Simulation, volume 28(3), pp. 577-583, 2016.
   Co-author: Dongjin Huang and Youdong Ding

7. **Personality-Oriented Recommendation and Virtual Display for 3D Home Design Based on Interaction History**
   Journal of Applied Sciences, volume 33, pp. 407-418, 2015.
   Co-author: Dongjin Huang and Youdong Ding

8. **The contrast media of virtual angiography diffusion process simulation method based on SPH**
   China Invention & Patent
   Co-author: Dongjin Huang, Youdong Ding, Zhifeng Xie etc.

9. **Real-time balloon angioplasty surgery process simulation method**
   China Invention & Patent
   Co-author: Dongjin Huang, Zhifeng Xie and Youdong Ding