# Research Interests

**Computer Graphics: Physics based animation**

* Fast and accurate simulation of complex deformable materials
* Computational simulation of solid fracture, fluid, and hair
* Artistic control of physics-based simulation

# Education

## Peking University September 2010 - June 2015 (expected)

* Ph.D. Candidate in Computer Science
* Advisor: Prof. Guoping Wang

## Xi’an Jiaotong University September 2006 - June 2010

* B.E. in Computer Science with honors (rank 1st /183)
* Thesis: Comparative Study of two GPU-friendly Mesh Refinement Algorithms

# Experience

## Visiting Graduate Researcher

University of California, Los Angeles September 2013 – December 2013

* Work with [Prof. Joseph Teran](http://www.math.ucla.edu/~jteran/) on a hair simulation project using Material Point Method

**Teaching Assistant**

Peking University February 2013 – June 2013

* Undergraduate computer graphics course
* Give lectures and provide assistance with course projects

# Projects

[**Physika**](https://github.com/FeiZhu/Physika)**: a versatile physics simulation library**

* Project organizer and maintainer
* Designed architecture of the library, constructed cross-platform build tool for the project, and serve as major code contributor

**Artistic Control of Deformable Simulation**

* A novel algorithm for example-based deformable simulation
* Outperform previous methods in computational efficiency and the choice of input example shapes
* Paper accepted by Computer Graphics Forum

**Meshless Simulation of Solids and Fluids**

* Study the application of meshless methods to solid simulation and fluid simulation
* Proposed a new method to increase the stability of meshless methods for solid simulation
* Paper accepted by IEEE Conference on CAD/CG 2011

**Geometric Modeling with Semantic Constraints**

* Developer of the semantic editing tool for *PUM*, a CAD modeling system of PKU Graphics Lab
* Support shape editing with predefined constraints, e.g. parallelism and perpendicularity

**Mesh Processing in Multi-View Reconstruction**

* Developer of the mesh-processing tool for *2-3DView*, a multi-view reconstruction system that reconstructs 3D models from a series of photographs.
* Implemented state of the art mesh simplification and reconstruction algorithms into the system

# Publications

* **Fei Zhu**, Sheng Li, Guoping Wang: *Example-based Materials in Laplace-Beltrami Shape Space*. Computer Graphics Forum: to appear.
* Ning Liu, **Fei Zhu**, Sheng Li, Guoping Wang: *Anisotropic Kernels for Meshless Elastic Solids*. Proceedings of the 12th International Conference on Computer-Aided Design and Computer Graphics: 349-356. DOI: [10.1109/CAD/Graphics.2011.33](http://dx.doi.org/10.1109/CAD/Graphics.2011.33)

# Skills

 **Languages:** Mandarin Chinese (native), English (professional working proficiency)

 **Programming Languages:** C, C++, Objective-C, Java

 **Tools:** Gcc/G++, Scons, Makefile, Git, SVN, LaTeX, OpenGL, OpenMP, Emacs, etc.

 **Operating Systems:** Windows, MacOS, Linux

# Honors & Awards

## President Scholarship, Peking University 2010 - present

## Founder Scholarship, Peking University 2011

## Outstanding Graduate, Xi’an Jiaotong University 2010

National Encouragement Scholarship 2008 – 2009

EASTCOM Scholarship, Xi’an Jiaotong University 2007

SiYuan Scholarship, Xi’an Jiaotong University 2006