# Jing Liu

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## EDUCATION

Expected in Jul.2011 B.S. , Computer Software, Tsinghua University, P. R. China
Overall GPA: **88.2/100**, Major GPA: **87.6/100**

Jul.2004 -- Sep.2004 Exchange student at Xavier College, Melbourne, Australia

## RESEARCH EXPERIENCE

9/2010~Present **Facial Animation and Modeling Project, Tsinghua University**
Independent Researcher, Team Leader

- Studied fundamentals of *Principal Component Analysis, Radial Basis Function, Optical Flow.*
- Completed an application to explore intuitive ways for Geometric Modeling and Editing. This platform implemented methods in [*Differential Coordinates for Interactive Mesh Editing*] and was based on OpenMesh while TAUCS was used for solving sparse linear systems.
- Future Plan: integrate a Sketch Interface to improve user experience; use motion capture data to create realistic facial animation; synthesize morphable face models based on requested database.

7/2010~Present **Sketch-Based Image Retrieval Project, Tsinghua University**
Graphics and Geometric Computing Group, Advisor: Prof. Shi-Min Hu

- Team Work: built a novel iterative pipeline for Internet image retrieval with great performance; proposed the concept of "Group Saliency", clustering shape and color statistics to guide the finding of *Saliency Map* and *Grab-cut based Segmentation*.
- Improved the performance of the Shape Filter that was important for automatically selecting prior templates for clustering shape and color statistics in the pipeline; analyzed related works and integrated methods such as *Shape Context*, *Zernike moment*, *Color Entropy*, *etc*.
- Writing a paper to be submitted to **ICCV** 2011.

10/2009~ 9/2010 **Research Training Program, Tsinghua University**
Institute of Computer Graphics and Computer Aided Design, Advisor: Prof. Jun-Hai Yong

- Proposed a Basis-Function-Maximum-Value parameterization method to solve the smooth curve construction problem resulted from non-uniform sampled data set.
- Provided both analytic and numerical solutions for this novel parameterization method, evaluated its performance by comparing it with other traditional methods.
- Participated in the development of a geometric modeling kernel for mesh models, in charge of mesh alignment and visualization, implemented grid file structure to speed up the measurement of differences between two mesh models.

## PUBLICATION

- **Jing Liu**, Kan-Le Shi, Jun-Hai Yong, He-Jin Gu. Generating Smooth B-Spline Curves Using Control-Point Interpolation. Journal of Computer-Aided Design & Computer Graphics 2010, In Press.

## AWARDS

2010 Ruize Group Scholarship for Excellent Students **(6 / 500)**
Scholarship of Tsinghua - Dongshi Dongfang **(3 / 66)**
2009 Scholarship of Tsinghua – Yongwang **(13 / 66)**
"Sport Star" of Tsinghua Campus **(10 students each year)**
2008 Tsinghua Outstanding Volunteer in 2008 Beijing Olympic Games
Scholarship for Student Attendees at WWDC held by Apple Company

## SELECTED COURSE PROJECTS

| | |
|---|---|
| Fundamental of Computer Graphics<br>Score: **95**/100, rank **6**/53 | Implemented quasi-conformal parameterization on scanned 3D facial mesh model for texture mapping. It was a hybrid C++/Matlab program with GUI for better performance through interactions. |
| Computer Graphics Real Time and Animation<br>Score: **97**/100, rank **2**/30 | Produced a short animation, simulating a ball's motion and deformation with basic physical rules; synthesized a panorama image of Tsinghua Auditorium; developed a 3D racing game. |
| Advanced Data Structures<br>Score: **96**/100, rank **4**/52 | With wavelet and RGB color features extracted from images, built an advanced R-tree to index and retrieve images; utilized Spherical Harmonic Transformation to extract features for better performance. |
| Discrete Mathematics<br>Score: **94**/100, rank **1**/66 | Developed a tour guide application for personalized route choice in Imperial Palace, modified Dijkstra Shortest Path Algorithm to satisfy both time and distance requirements. Coded using Flex. |
| Student Research Training | Built an application on mobile platform, realized remote control of big screen computer with smart phone through WiFi transmission. |

## EXTRACURRICULAR ACTIVITIES

7/2010 **5th APRU Impactful Leadership Program**, National University of Singapore

*One of Two Representatives of Tsinghua University*

- Proposed a framework for On-line Seminars, which won 2nd Prize in Proposal Competition
- Cooperated with students from diverse cultural backgrounds in seminars & workshops
- Received leadership training and gained certification awarded by APRU committee

4/2009~Present **Technological Entrepreneurship Practices**

*Active Participator*

- A selected student in Tsinghua-Berkeley Global Technology Entrepreneurship Education Program
- **Co-founder** of Know About Business Club, promoted business practice for students in campus
- **Top 10** in Entrepreneurship Business Plan Competition in Tsinghua University
- Member in a project for Location Based SNS on mobile platform, featured in Augmented Reality

9/2007~Present **Basketball Competitions**

*Captain of the team*

- Beijing University Basketball League B, 2nd place Spring, 2010
- Tsinghua Men's Basketball 3v3, two successive championships Year 2008, 2009
- Tsinghua Rookie Team Competition, 2nd place Summer, 2008

## COMPUTER SKILLS

Proficient in **C++/OpenGL/OpenCV, JAVA, MATLAB, CSS/HTML**.

Familiar with **Maya, Photoshop**.

## STANDARDIZED TESTS

**TOEFL:** 109

**GRE:** 1290 + 3.5 (490+800+3.5)