

Fu-Chung Hunag

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RESEARCH INTERESTS	Computer animation, specifically facial animation, character animation, animation capturing, geometric modeling, and computer vision.	
EDUCATION	National Taiwan University, Taipei, Taiwan Master of Information Management, July 2007 <ul style="list-style-type: none">• Dissertation Topic: "Lips-Sync 3D Speech Animation using Compact Key-Shapes"• Advisor: Bing-Yu Chen and Young-Yu Chuang National Taiwan University, Taipei, Taiwan Bachelor of Information Management, July, 2005	
HONORS AND AWARDS	Presidential Award (<i>on top 5 percentile of the department</i>), 2004	
ACADEMIC EXPERIENCE	Communication and Multimedia Lab, CSIE, NTU, Taipei, Taiwan <ul style="list-style-type: none">• Research Assistant Sep. 2007 - present Extending previous research and collaborating with affiliated companies, job includes research development and technology transfer.• Teaching Assistant for Geometric Modeling Feb. - June, 2007 Developed the skeleton code based on FLTK, CGAL, and GLUT. Duties also included grading and office hours.• Teaching Assistant for Game Programming Sep. 2006 - Jan. 2007 Duties included office hours and grading.	
INTERNATIONAL CONFERENCE	Fu-Chung Huang , Bing-Yu Chen, Yung-Yu Chuang, " <i>Progressive Deforming Meshes based on Deformation Oriented Decimation and Dynamic Connectivity Updating</i> ", ACM SIGGRAPH / Eurographics Symposium on Computer Animation 2006 , p.53-p.62, Vienna, Austria, 2006. Fu-Chung Huang , Bing-Yu Chen, Yung-Yu Chuang, " <i>Progressive Deforming Meshes based on Deformation Oriented Decimation</i> ", ACM SIGGRAPH Conference Abstracts and Applications(Poster Program) , Boston, Massachusetts, USA, 2006. Also accepted for SIGGRAPH Student Research Competition .	
PAPERS IN PREPARATION	Fu-Chung Huang , Bing-Yu Chen, Yung-Yu Chuang, " <i>Animating Lips-Sync Speech Faces with Compact Key-Shapes</i> ", submitted to Eurographics 2008 .	
DOMESTIC CONFERENCE	Fu-Chung Huang , Bing-Yu Chen, Yung-Yu Chuang, " <i>Lips-Sync 3D Speech Animation using Compact Key-Shapes</i> ", proceedings of 2007 Workshop on Computer Graphics , National Sun Yat-Sen University, Kaohsiung, Taiwan, 2007. Bing-Yu Chen, Jun-Ze Huang, Fu-Chung Huang , and Yung-Yu Chuang, " <i>Speech-Driven 3D Facial Animation</i> ", proceedings of IPSJ SIGCG 125th Seminar , Vol. 2006, No.119, p.89-p.94, Kyoto University, Kyoto, Japan, 2006. Fu-Chung Huang , Bing-Yu Chen, Yung-Yu Chuang, and Min Ouhyoung, " <i>Animation Model Simplification</i> ", proceedings of 2005 Workshop on Computer Graphics , National Taiwan University, Taipei, Taiwan, 2005.	

RESEARCH
EXPERIENCE

- **Speech Driven Facial Animation** **Sep. 2006 - present**
Most recent research that intended to train an multi-dimensional lip-shape space that can be synthesized from novel speech. Some core contributions includes automatical classification for the key-shapes, a non-linear cross-mapping method that have physical meaning. The research was submitted to Eurographics 2008.
- **Mesh-Based Inverse Kinematics** **Feb. 2006 - May 2006**
The project started to extend "*Trainable videorealistic speech animation*", the idea was to track the results from the paper and used techniques from MeshIK to drive a novel person. I implemented the core engine of MeshIK. The 2nd version was rewritten to remove UI and included more coding features. Source code of MeshIK is available at my homepage.
- **Simplification on Animating Mesh Model** **July 2005 - April 2006**
The research was an extension to simplification on static mesh model, and mainly focused on how model deforms and the simplification on its topological property. The first part dealt with how simplification should preserve features given the same connectivity. The second part discussed how to modify the connectivity if it is allowed to change and minimized the cost required to do so. This work was later accepted by ACM SIGGRAPH/Eurographics SCA 2006 conference.
- **Perception-Based Evaluation on Mesh Simplification** **Sep. 2005 - Dec. 2005**
A project called "*Nebula : A Mesh-Error Measuring Tool Based on Rendered Images*" aimed at surveying simplification methods. Primary purpose was to provide an alternative to the popular evaluation tools "*Metro: Measuring error on simplified surfaces*" that uses geometric differences as opposed to our perception based evaluation. Algorithm was derived from Peter Lindstrom's Ph.D. thesis. Source code available at my homepage.
- **Memoryless Simplification** **Feb. 2005 - March 2005**
This was a self-motivated project to compare the performance of "*Memoryless Simplification*" by Peter Lindstrom to that of "*Quadric Error Metric*" by Michael Garland. The code was implemented using library from QSLim developed by Michael Garland, and executable available at my homepage.
- **Java Game Development** **Feb. 2005 - July 2005**
The job was part of the research project at Communication and Multimedia Lab. in affiliation with Quanta Computer Inc. to develop prototype games in Java Phone platform.
- **UPnP Media Server** **Sep. 2002 - Feb. 2003**
A paid project at developing proprietary UPnP Media Server for a network service company, owned by professor Yetli Sun in Dept. Information Management, National Taiwan University.
- **Taiwan Academic Network (TANet) IPv6 Infrastructure** **Feb. 2002 - Aug. 2002**
A project aimed at deploying IPv6 infrastructure for TANet as a precursor in Taiwan for other network company. I primarily worked on the program of IPv6 Tunnel Broker and DNS registration services.

COMPUTER SKILLS

- Graphics/Vision Package: CGAL, OpenGL, GLUT, OpenCV, QSLim
- Languages: C/C++, Java, Perl, PHP
- Special Platform: Matlab, J2ME(Java Phone), Java Card, MFC
- Operating Systems: Unix/Linux, Windows.