

PROFESSIONAL OBJECTIVES

*Broaden technological horizons through innovation***Design** and **build** applications that facilitate the *use* and *creation* of rich multimedia content**Participate** in complete design process, from usability requirements down to implementationLeverage **expertise** in 3D graphics, physically based modeling, and computer visionEDUCATION

- 2003-PRES. **University of North Carolina, Chapel Hill (UNC)** **N.Carolina, U.S.A.**
PhD student in Computer Graphics and Visual Technology, Computer Science Department.
- 2002-2003 **Swiss Federal Inst. of Technology Zürich (ETH)** **Zürich, Switzerland**
Combinatorics, Geometry and Computation pre-doc program
Courses in Randomized and Approximation Algorithms, Computer Graphics and Computer Vision
- 1997-2002 **Katholieke Universiteit Leuven** **Leuven, Belgium**
Master of Science in Electrical Engineering
Signal Processing: extensive courses in image, speech and audio processing
Selected courses in Master of Artificial Intelligence programme
- 2000-2001 **ENSIEG (INPG) – ERASMUS exchange program** **Grenoble, France**
Signals/Systems dept., Signal-Image-Communications option

EXPERIENCE

- 2003-PRES. **University of North Carolina, Chapel Hill** **Chapel Hill, NC, U.S.A.**
Research assistant in physically based modeling and computer graphics (advisor: Prof. Ming C. Lin)
Physically based and adaptive animation and simulation of deformable objects and articulated bodies
Acceleration of general-purpose and numerical algorithms on graphics processors
Realistic rendering of hair with LOD representations
- 2007 **Intel Corporation (Advanced Visual Computing / Software Solutions)** **Portland, OR, U.S.A.**
Parallelization and acceleration of real-time soft body simulation for next-gen multicore processors.
Exposing threading and vectorized hardware features in developer SDK, essential to differentiation of multicore architectures for physics simulation in computer games and inspiring new uses of the platform.
- SUMMER 2005&2006 **Swiss Federal Institute of Technology (ETHZ)** **Zürich, Switzerland**
Research visit (advisors: Dr. Miguel A. Otaduy, Prof. Ming C. Lin, Prof. Markus Gross)
Fast contact modeling of soft objects and soft articulated characters
- 2004 **Rhythm & Hues Studios** **Los Angeles, CA, U.S.A.**
Research Scientist Intern (advisor: Tae-Yong Kim)
Development of simulation tools for natural phenomena, such as cloth, hair, ...
GPU based acceleration algorithms for large sparse linear solvers
- 2003 **Swiss Federal Institute of Technology (ETHZ)** **Zürich, Switzerland**
Blue-C: Virtual reality platform for immersive environment and collaboration (advisor: Prof. Luc van Gool)
Online image segmentation: algorithm design, optimization and implementation
- 2002 **Master's thesis** **Katholieke Universiteit Leuven, Belgium**
Anonymity and security in decentralized (P2P) networks (advisors: Prof. Joos Vandewalle & Prof. Bart Preneel)

REFEREED PUBLICATIONS

- 2007 **Soft Articulated Characters with Fast Contact Handling**
Nico Galoppo, Miguel A. Otaduy, Serhat Tekin, Markus Gross, Ming C. Lin
Computer Graphics Forum Vol.26(3) (Proc. of Eurographics 2007, Prague, Czech Republic)
- 2006 **Fast Simulation of Deformable Models in Contact Using Dynamic Deformation Textures**
Nico Galoppo, Miguel A. Otaduy, Paul Mecklenburg, Markus Gross and Ming C. Lin
ACM SIGGRAPH/Eurographics Symposium on Computer Animation 2006, Vienna, Austria
- Interactive Virtual Hair Salon**
Kelly Ward, Nico Galoppo, Ming C. Lin
Presence: Teleoperators and Virtual Environments, The MIT Press
- A Simulation-based VR System for Interactive Hairstyling**
Kelly Ward, Nico Galoppo, Ming C. Lin
Proc. of IEEE VR 2006, Alexandria, VA
- 2005 **LU-GPU: Algorithms for Dense Linear Systems on Graphics Hardware**
Nico Galoppo, Naga Govindaraju, Michael Henson, Dinesh Manocha
Proc. of ACM SuperComputing 2005, Seattle, WA
- Adaptive Dynamics of Articulated Bodies**
Stephane Redon, Nico Galoppo, Ming C. Lin
Proc. of ACM SIGGRAPH 2005, Los Angeles, CA
- 2004 **Modeling Hair Influenced by Water and Styling Products**
Kelly Ward, Nico Galoppo and Ming C. Lin
Proc. of Computer Animation and Social Agents (CASA), 2004

INVITED PUBLICATIONS

- 2007 **Haptic Rendering of High-Resolution Deformable Objects**
Nico Galoppo, Serhat Tekin, Miguel A. Otaduy, Markus Gross, Ming C. Lin
12th International Conference on Human-Computer Interaction, July 2007, Beijing, China

REFEREED RESEARCH SKETCHES & SHORT PAPERS

- 2007 **Accelerated Proximity Queries for Haptic Rendering of Deformable Models**
Nico Galoppo, Miguel A. Otaduy, Paul Mecklenburg, Markus Gross and Ming C. Lin
World Haptics Conference 2007, Tsukuba, Japan
- 2006 **Fast Simulation of Detailed Layered Deformable Objects in Contact**
Nico Galoppo, Miguel A. Otaduy, Paul Mecklenburg, Markus Gross and Ming C. Lin
ACM SIGGRAPH 2006 Sketches and Applications, Boston, MA
- 2004 **Simulating and Rendering Wet Hair**
Kelly Ward, Nico Galoppo, and Ming C. Lin
ACM SIGGRAPH 2004 Sketches and Applications, Los Angeles, CA

AWARDS AND FELLOWSHIPS

- 2003-2004 **Belgian American Education Foundation Fellowship** Belgium
Franqui Foundation Fellow
- 2002-03 **European Graduate Program CGC** Berlin, Zurich, Switzerland
Pre-doctoral program in Combinatorics, Geometry and Computation

EXPERTISE

Research expertise

Computer graphics, vision, computational geometry and numerical linear algebra
Physical Simulation: Deformable, articulated and rigid body dynamics and animation
GPU-based algorithms: Numerical solvers, general-purpose GPU computations and rendering acceleration
Computer animation, modeling tools, renderers and shaders

Software engineering

Programming: C/C++, STL, C#, Java, Perl, PHP, SQL, (X)HTML/XML, misc. assembly
Graphics APIs: OpenGL, GLSL, Cg, HLSL, OpenSceneGraph, G3D graphics library
Networking: TCP/IP, PPP, DHCP, NFS, service administration (WWW/FTP, SSH, mail)
3D tools: 3D Studio MAX, MAXScript, Houdini, Maya
Other: CVS, MATLAB, Mathematica, Xilinx foundation
Operating Systems: Windows/Linux/DOS platforms

LANGUAGES

Dutch (mother tongue), English, French, Spanish (fluent), German, Italian (basic)

INTERESTS – OTHER ACTIVITIES

Former member of youth movement group
Running, tennis, fitness, cooking
Meeting foreign cultures, through travels as well as through taking courses and study programmes abroad

REFERENCES

Ming C. Lin

Sitterson Hall, CB #3175
University of North Carolina, Chapel Hill
Chapel Hill, NC 27599-3175
+1-919-962 1974
lin@cs.unc.edu

Dinesh Manocha

Department of Computer Science
University of North Carolina, Chapel Hill
Chapel Hill, NC 27599-3175
+1-919-962 1749
dm@cs.unc.edu