Aleksey Golovinskiy
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Education

Princeton University (Princeton, NJ) 2004 – Present
Ph.D. in Computer Science expected in August 2009.
Advisor: Thomas Funkhouser. 3.9/4.0 GPA
Topic: Analysis of texture, symmetry, and part structure of 3D surfaces.

Princeton University (Princeton, NJ) 2004 – 2006
M.A. in Computer Science.
Topic: Textural model of fine-scale 3D facial geometry.

MIT (Cambridge, MA) 2000 – 2004
B.A. in Mathematics with Computer Science; B.A. in Physics
4.9/5.0 GPA, Phi Beta Kappa Society

Experience

Funkhouser Software (Pennington, NJ) Summer 2008
Consultant. Developed algorithms for processing in 3D point clouds from LIDAR scans of cities. Developed methods for estimating ground planes, locating potential objects, segmenting objects from the background, and recognizing objects. Ran and evaluated a prototype system on a scan of Ottawa containing a billion points.

Mitsubishi Electronics Research Lab (Cambridge, MA) Summer 2005
Intern. Designed and implemented a system for analyzing and adjusting detailed geometry of 3D face models. The system extracts fine-scale geometry from 3D face models, and captures statistics describing the geometry (how rough the skin is, orientation of wrinkles, etc). The user can then edit these statistics as desired. The system was demonstrated for applications such as making a face model look older or younger, and adding plausible high-resolution detail to a low-resolution face model.

Balyasny Asset Management (New York, NY) Summer 2004
Intern. Worked on the infrastructure code to provide real time streaming market data to a trading application. Requested data using a proprietary Pub/Sub protocol similar to TIBCO RV over TCP connection. Provided client API to retrieve streaming market data using .Net Remoting. Tracked client subscriptions and sent updates to interested parties. Used full/incremental updates to improve performance. Supported load balancing and error recovery.

Xerox Palo Alto Research Center (Palo Alto, CA) Summer 2003
Intern. Worked in PARC's modular robotics group. Designed and implemented a markup language to program robots composed of one-degree-of-freedom modules in a scalable manner. Created a specification under which users can define in XML the structure of a robot, and program the robot through a state machine model.

BEAST FINANCIAL (New York, NY) Summer 2002

Intern. Developed a client simulator for a distributed equity trading system software package. The simulator opens an XML profile that uses a system of evaluators in a scripting pseudo-language to specify a particular simulation scenario, which defines the behavior of a system of independently simulated clients. Logs server performance statistics, and analyzes and partitions them for more efficient presentation. Each simulated client runs in a separate process, and uses a system of streams to communicate with the main application. Simulated clients can run locally or on remote machines (for server stress testing).

Publications

X. Chen, A. Golovinskiy, T. Funkhouser. *A Benchmark for 3D Mesh Segmentation.* SIGGRAPH 2009 (to appear).

A. Golovinskiy and T. Funkhouser. *Consistent Segmentation of 3D Models.* Computers and Graphics (Shape Modeling International 2009, to appear).

A. Golovinskiy and T. Funkhouser. *Randomized Cuts for 3D Mesh Analysis.* SIGGRAPH ASIA 2008.

F. Cole, A. Golovinskiy, A. Limpaecher, H. Barros, A. Finkelstein, T. Funkhouser, and S. Rusinkiewicz. *Where Do People Draw Lines?* SIGGRAPH 2008.

J. Podolak, A. Golovinskiy, S. Rusinkiewicz. *Symmetry-Enhanced Remeshing of Surfaces.* Symposium on Geometry Processing 2007.

A. Golovinskiy, J. Podolak, T. Funkhouser. *Symmetry-Aware Mesh Processing.* Technical Report TR-782-07, 2007.

J. Podolak, P. Shilane, A. Golovinskiy, S. Rusinkiewicz, and T. Funkhouser. *A Planar-Reflective Symmetry Transform for 3D Shapes.* SIGGRAPH 2006.

A. Golovinskiy, W. Matusik, H. Pfister, S. Rusinkiewicz, and T. Funkhouser. *A Statistical Model for Synthesis of Detailed Facial Geometry.* SIGGRAPH 2006.

A. Golovinskiy, M. Yim, Y. Zhang, C. Eldershaw, D. Duff. *PolyBot and PolyKinetic System: A Modular Robotic Platform for Education.* IEEE ICRA 2004.

Y. Zhang, A. Golovinskiy, M. Yim, C. Eldershaw. *An XML-based Scripting Language for Chain-type Modular Robotic Systems.* 8th Conference on Intelligent Autonomous Systems (IAS-8), 2004.

Teaching

PRINCETON UNIVERSITY (Princeton, NJ) Fall 2005 – Spring 2006

Teaching Assistant. Taught recitations, helped design problem sets, graded:

- COS 323: Computing for the Physical and Social Sciences
- COS 341: Discrete Mathematics

STUYVESANT HIGH SCHOOL (New York, NY) Fall 2003 – Spring 2004

Math Team Captain. As a senior, taught a daily math problem-solving class to freshmen. Designed lessons plans and tests.

Skills

Matlab, Java, C/C++/C#, Scheme/LISP, VHDL