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(until August 19, 2006)
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Michael Pratscher

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Professional Objective

To utilize my expertise and technical skills in computer graphics and animation as a software engineer with emphasis in video game tools, engine, or gameplay development

Professional Skills

- **Communication:** system demonstration and training to military and government officials; product manual documentation; research presentations; course lectures
- **Team:** 30 person rapid prototyping; 20 person residence hall organization; film & game competitions
- **Leadership:** co-supervision of summer intern; residence hall counselor
- **Problem Solving:** application of CG techniques to defense planning solution; research publication

Technical Skills

Programming Languages

- C/C++ (OOP)
- Perl
- C#
- Visual Basic/VBA
- Java
- JavaScript/XHTML

Libraries and Packages

- OpenGL
- STL
- ClearCase/CVS/RCS
- Maya (5.0 – 7.0)
- Familiarity with POSIX threads, multi-threaded programming, and network programming
- Maya API
- JFC/Swing
- SDL
- Adobe Premiere
- Maya MEL
- MATLAB
- MFC/GLUI/FLTK
- Adobe Photoshop

Development Platforms

- Windows (9x/2000/XP)
- Unix (Irix, Solaris)
- Linux

Education

Ph.D. Candidate, Computer Science Anticipated Degree Date: May 2008
University of Toronto, Toronto, Ontario
Research Interests: character animation, character modeling, curve and surface modeling

M.S., Computer Science March 2002
Johns Hopkins University, Baltimore, Maryland
Concentration in Visualization and Human-Computer Interaction

B.S., Computer Science and Mathematics (dual major) May 1999
Purdue University, West Lafayette, Indiana
Graduated with Distinction from Computer Science Honors Program

Publications

- Outside-In Anatomy Based Character Rigging.*** Michael Pratscher, Patrick Coleman, Joe Laszlo, and Karan Singh. ACM SIGGRAPH/Eurographics Symposium on Computer Animation 2005, pp. 329-338.
- Semi-automatic, interactive methodology for generating musculoskeletal structures from an artist-sculpted character skin which is then deformed using a novel intuitive geometric deformation model

Professional Experience

University of Toronto, Toronto, Ontario January 2004 – Present

Teaching Assistant – Computer Graphics – Department of Computer Science

- Organize and lecture at weekly tutorials explaining algorithms and concepts to senior students
- Developed OpenGL-based animation system skeleton code used in programming assignments

Johns Hopkins University Applied Physics Laboratory, Laurel, Maryland June 1999 – August 2003

Tactical Planning and Operations Systems Engineer – Air Defense Systems Engineering

- Member of a 30 person rapid prototyping team that revolutionized air defense planning and real-time 3D tactical displays for the military—prototype systems are currently in use around the world
- Applied computer graphics principles and techniques, such as the Jordan Curve Theorem and Bresenham's line algorithm, to quickly and efficiently solve a complex air defense planning problem
- Developed novel texturing and texture memory management framework for OpenGL to meet 3D display realism, animation quality, and real-time interaction objectives
- Co-supervised a summer intern, designing and guiding development of a geographic feature database extraction system for generating high-resolution terrain textures
- Demonstrated and trained the operation of the prototype system to clientele, including military officers, government officials, and industry representatives

Lockheed Martin, Orlando, Florida

Summer 1998

Software Engineer – Information Systems

- Developed low-level RS-232 software interfaces for enabling Ascension Flock of Birds motion tracking devices to control 3D displays of military flight and tank simulator systems
- Documented new and enhanced simulator features for manuals distributed with commercial product

Purdue University, West Lafayette, Indiana

January 1998 – May 1999

Residence Hall Counselor

- Responsible for the maintenance, safety, and well-being of a floor with 54 residents
- Organized programs, activities, and a positive sense of community for all hall residents

Amoco Corporation, Whiting, Indiana

Summers 1996, 1997

Programmer – Information Technology Department

- Created an online tutorial to assist departments in the development of intranet web sites
- Implemented a system for uploading and categorizing critical health data with online databases

Projects & Activities

Professional

- Reviewer: *Papers* – SCA 2006, GI 2006; *Sketches* – SIGGRAPH 2006
- Student Volunteer: SIGGRAPH 2006

Academic

- Re-established and co-organize weekly student graphics meetings, Fall 2004 – Present
- Volumetric sculpting, Geometric Representations for CG Course, K. Singh, Fall 2005
- Bezier and B-Spline curves, Splines Course, S. Mann, Summer 2005
- Best animated short, Character Animation Course, K. Singh, Spring 2004
- Flocking behavior, Machine Learning for CG Course, A. Hertzmann, Fall 2003
- Co-organized DGP-hosted Research Day, University of Toronto, November 15, 2003

Independent

- Participant, 8th Ludum Dare 48 Hour Programming Challenge, April 2006
- Team member, 24 Hour Toronto Film Challenge, April 2005
- Member of Most Innovative Game winning team, 72 Hour Game Dev Competition, December 2004
- Graphic designer / program scheduler, Boiler Television, Purdue University, Fall 1998 – Spring 1999