

## John W. Kloetzli Jr, Graduate Student

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The University of Maryland, Baltimore County, Baltimore, MD 21250  
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### Education

Expected **May 2008**

M.S in Computer Science with a concentration in Computer Graphics  
GPA 4.0

**May 2006**

B.S. in Computer Science from the University of Maryland, Baltimore County  
Minors: Mathematics and Philosophy  
GPA 3.68

### Work Experience

**Research Assistant**

2/2007 - present

at UMBC for Dr. Marc Olano and Dr. Penny Rheingans. Researched method for hardware-accelerated isosurface rendering of volumes. The technique rendered **high-quality** cubic reconstruction filtered volumes exactly though local ray-tracing on graphics hardware.

**Teaching Assistant**

8/2006 - 12/2006

at UMBC for CMSC426/626 (*Principles of Computer Security*) and CMSC443 (*Cryptography*). Responsibilities included:

- Grading written homework and programming projects (50+ projects total)
- Implementing reference versions of programming projects

**Computer Graphics Temporary Programmer**

5/2006 - 8/2006

at **Firaxis Games**. Designed and implemented various graphics demo programs on multiple platforms and contributed game logic code to **Sid Meier's: Railroads!** PC video game. Responsibilities included:

- Development of graphics demo programs on multiple game systems
- Design and development of a game subsystem in **Sid Meier's: Railroads!**
- Integration and maintenance of game subsystem using **Perforce** versioning software

**Software Development Intern**

5/2005 - 8/2005, 12/2005 - 1/2006

at AGNIK, LLC in Columbia, Maryland. Designed and implemented multi-agent collaboration platform in Java. Responsibilities included:

- Developing high-level design of the system with documentation
- Implementing the design using Java networking capabilities
- Leading small intern Java development team

**Student Researcher**

9/2004 - 5/2005

at DIADIC Research Lab, UMBC in Baltimore, Maryland. Designed and implemented distributed data mining development/testing platform for use in research and teaching. Responsibilities included:

- Developing requirement for platform in cooperation with DIADIC researchers
- Designing platform based upon requirements gathered
- Implementing design in Java
- Implementing GUI in Swing

**Computer  
Graphics  
Coursework**

**Graphics Hardware Acceleration of Dynamic Programming Algorithms**

Group project for **CMSC641** (Advanced Algorithms). Designed and implemented a Graphics Processing Unit accelerated dynamic programming algorithm using the **NVIDIA CUDA** framework.

**Undergraduate Thesis** in Computer Graphics (requirement for Computer Science Honors Program)

Developed a method to render fur with realistic lighting in real-time. Title is *A Volumetric Approach to Rendering Microgeometry Using Precomputed Radiance Transfer*.

**Computer Graphics Projects** implemented for classes. Classes include CMSC435 (*Introduction to Computer Graphics*), CMSC635 (*Advanced Computer Graphics*), CMSC691A (*Artistic Rendering*), and CMSC437 (*Interactive Computer Graphics*).

- Designed and implemented a hardware-accelerated line rendering technique based upon Relief Texture Mapping
- Designed and Implemented a fur renderer using Precomputed Radiance Transfer for global lighting
- Implemented ray-tracer with arbitrary planar polygons and spheres including shadows and reflections
- Implemented texture synthesis method described in *Synthesizing Natural Textures* by Michael Ashikhmin (2001 ACM Symposium on Interactive 3D Graphics March 2001:217-226)

**Academic  
Honors**

Member of the following honors programs/societies:

- UMBC Research Assistantship from the UMBC CSEE graduate program
- UMBC Teaching Assistantship from the UMBC CSEE graduate program
- Phi Beta Kappa
- UMBC Computer Science Honors Program
- Upsilon Pi Epsilon International Honor Society
- UMBC University Scholar Award (four-year full scholarship)
- UMBC Honors College
- Golden Key International Honour Society