

Amy C. Ulinski

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Research Interests

My research interests include 3D user interaction (3DUI), virtual environments, virtual humans, human-computer interaction (HCI) and 3D visualization. I am particularly interested in 3D user interaction for visualizations of volumetric data.

Education

University of North Carolina at Charlotte | Charlotte, NC | GPA: 4.0 Exp.Grad: May 2009

PhD, Department of Computer Science

College of Information Technology

Advisor: Dr. Larry F. Hodges

University of North Carolina at Charlotte | Charlotte, NC | GPA: 3.83

June 2003 – May 2005

Masters of Science, Department of Computer Science

College of Information Technology

Advisor: Dr. Larry F. Hodges

Duquesne University | Pittsburgh, PA | GPA: 3.65

Aug 1999 – May 2003

Bachelor of Science, Department of Computer Science

Bachelor of Arts, Department of Studio Arts

Advisor: Dr. Jeffery Jackson

University of Pittsburgh | Pittsburgh, PA | GPA: 4.00

Sept 1996 – May 1999

Joint Enrollment during high school sophomore, junior, and senior years

Publications

Journals

Zanbaka, C., Lok, B., Babu, S. Xiao, D., **Ulinski, A.**, and Hodges L.F. (2005). "Comparison of Path Visualizations and Cognitive Measures relative to Travel Technique in a Virtual Environment." In IEEE Transactions on Visualization and Computer Graphics.

Conference Papers

Ulinski, A., Wartell, Z., Goolkasian, P., Hodges, L. F. "Bimanual Task Division Preferences for Volume Selection." To appear in *Proceedings of VRST 2007*.

Ulinski, A., Zanbaka, C., Wartell, Z., Goolkasian, P., Hodges, L. F. "Two-handed selection techniques for 3D volumetric data." In *Proceedings of 3DUI 2007*, Charlotte, NC, 107-114.

Zanbaka, C., **Ulinski, A.**, Goolkasian, P., Hodges, L. F. "Social responses to virtual humans: Implications for future interface design." *Honorable Mention for Best of CHI Award*. In *Proceedings of CHI 2007*, ACM Press (2007), 1561 - 1570.

Zanbaka, C., **Ulinski, A.**, Goolkasian, P., Hodges, L. F. (2004). "Effects of Virtual Human Presence on Task Performance," Proceeding of the *International Conference on Artificial Reality and Telexistence (ICAT)*, pp. 174-181.

Zanbaka, C., Lok, B., Babu, S. Xiao, D., **Ulinski, A.**, and Hodges L.F. (2004). "Effects of Travel Technique on Cognition in Virtual Environments," In *Proceedings of IEEE Virtual Reality 2004*, Chicago, IL, 149-156, 286.

Invited Papers

Ziemkiewicz, C., **Ulinski, A.**, Zanbaka, C., Hardin, S., Hodges, L. F. (2005). "Interactive Digital Patient for Triage Nurse Training." *First International Conference on Virtual Reality*, Las Vegas, Nevada 22 - 27 July.

Videos and Demonstrations

Ziemkiewicz, C., **Ulinski, A.**, Zanbaka, C., Suma, E., Powell, E., Hodges, L. F., Godwin, A., Chaffin, A., Babu, S. "Let's Talk about UNC Charlotte: A conversation with a Virtual Human." Research Demonstration at the *IEEE Virtual Reality 2006 Conference*, Alexandria, VA, USA, March 25-29, 2006.

Zanbaka, C., Lok, B., Babu, S., Xiao, D., **Ulinski, A.**, Hodges, L.F. (2004). "Effects of travel technique on cognition in virtual environments." *IEEE Virtual Reality 2004 Video Proceedings*.

Invited Talks

Amy Ulinski. "Grab, Point, Squeeze, or Shrink...Why not? Implications of Selecting in 3D Visualizations of Volumetric Data." *The Charlotte Visualization Center Seminar, University of North Carolina at Charlotte*, October 18, 2007.

Amy Ulinski. "Two Hands Up: Exploring Bimanual Task Division for 3D Volumetric Selection Techniques." *Graduate Seminar, University of North Carolina at Charlotte*, Spring 2006.

Amy Ulinski and Catherine Zanbaka, "If a digital human gave you a compliment, would it brighten your day?" *Center for Human Computer Interaction and 3D Interaction Group, Virginia Tech*, October 25, 2004.

Amy Ulinski, "Overview of Digital Humans and Virtual Environments Research" *Freshman Seminar, University of North Carolina at Charlotte*, October 25, 2004.

Professional Experience

Graduate Research Assistant,

Future Computing Lab/ Virtual Environments Group
Department of Computer Science
University of North Carolina at Charlotte, Charlotte, NC

Full-time Jun 03 – Present

- Currently leading research in 3D user interfaces in particular for currently working on developing selection techniques for 3D visualizations of volumetric data in the attempt to establish 3D interaction metaphors for these environments.
- Currently working on establishing a taxonomy for 3D interaction techniques for 3D visualizations of volumetric data.
- Worked on creating a 3D visualization for weather data as a test-bed application for the interaction techniques developed and currently being developed.
- Co-developed Digital Patient for teaching nurse practitioners interviewing and assessment skills in Triage. Conducted study resulting in a paper to First International Conference on Virtual Reality.

- Assisting in running a study on the effect of travel technique on cognition in virtual environments which resulted in a paper to VR2004 Conference and with additional analysis in a journal paper in IEEE Transactions on Visualization and Computer Graphics.
- Assisting in conducting research with virtual humans in the attempt to establish whether or not virtual characters produce the same responses as real characters. Tasks include programming and designing characters, and assisting in designing and conducting studies.
- Using SVE, Haptik virtual character software, OpenGL, FLTK, VTK, C++, Java Servlets, JSPs, 3DS Max, and Deep Explorations.

Computer Science Department Web Developer,

Part-time May 06 - May 07

Department of Computer Science

University of North Carolina at Charlotte, Charlotte, NC

- Responsible for maintaining computer science department website, other websites belonging to various laboratories in the department, such as the Future Computing Lab, Center for Visualization and SRVAC.
- Designing webpages for various laboratories in the department, such as the Future Computing Lab, Center for Visualization and SRVAC.
- Creating and maintaining various web applications for the department.
- Using Java, and javascript.

Graduate Summer Intern at the Center for Computational Science

Full-time May 06 – Aug 06

U.S. Naval Research Laboratory, Washington D.C.

- Designed and developed interfaces
- Conducted usability testing on the interfaces
- Helped convert code of the application for the project to Open Scene Graph

Undergraduate Research Assistant,

Full-time Feb 02 - May 03

Department of Computer Science

Part-time Jun 01 - Aug 01

Duquesne University, Pittsburgh, PA

- Research related to computational learning, specifically learning DNF functions.
- Implementing algorithms and contributed to construction of theories and learning algorithms. Gave several award-winning presentations at mathematical conferences.
- Using C++, Java.

Computer Science Tutor,

Part-time Jan 01 – Feb 02

Department of Computer Science

Duquesne University, Pittsburgh, PA

- Tutoring students in Java, C++, and Visual Basic programming languages.

Web Developer Intern,

Full-time Jun 01 - Aug 01,

Ceeva, Inc., Pittsburgh, PA

Part-time Aug 01 - Feb 02

- Lead in designing and developing dynamic web-pages for web-sites contracted through Ceeva, Inc., customer consultation, in-house graphics designing, and in-house web-development.
- Using Java, PHP, SQL, Adobe ImageReady, and Flash.

Telecommunity Computer Graphics Camp Assistant,

Part-time Jun 01 - Jun 02

Department of Studio Arts

Duquesne University, Pittsburgh, PA

- Instructing children how to use software programs such as Director, 3DS Max, Adobe Photoshop, Adobe Illustrator, and Painter, and helping with conceptual ideas and artistic skills.

Teaching Experience

Instructor, ITCS2214 Data Structures in Java

Full-time Aug 07 – Present

Future Computing Lab/ Virtual Environments Group

Department of Computer Science, University of North Carolina at Charlotte

- Instructor for an undergraduate level Data Structures in Java course.
- Responsible for all aspects of the class, including lesson plans, lectures, assignments, projects, exams, grading, tutoring and mentoring.

Student Mentoring:

Part-time Aug 07 – Present

Future Computing Lab/ Virtual Environments Group

Full-time May 07 – Aug 07

Department of Computer Science

University of North Carolina at Charlotte, Charlotte, NC

- Mentoring REU (Research Experiences for Undergraduates) students on project AVARI (Animated Virtual Agent Retrieving Information), of which 4 out of 5 were young women that I could offer my advice, encouragement, and support.
- The project is a virtual human that chats about professors in the computer science department, courses, advice for students, and more. Originally the project was geared towards college students, though anyone passing by can talk to her.
- Responsible for organizing the students, teaching them the basics of the tools and languages used, and mentoring them.
- Currently the students are working on deploying her in the hallway of the computer science building in order to gather information about how she interacts with others.
- Using Haptik, Java, Javascript, PHP, SALT, and MySQL.

Teacher's Assistant

Part-time Aug 05 - May 06

Graduate Level, Introduction to Computer Graphics Course

Department of Computer Science

University of North Carolina at Charlotte, Charlotte, NC

- Responsible for maintaining computer science department website, other websites belonging to various laboratories in the department, such as websites for the Future Computing Lab, Center for Visualization and SRVAC.
- Creating and maintaining various web applications for the department.

Teacher's Assistant,

Part-time Aug 01 - May 03

Undergraduate Level, Computer Science Courses

Department of Computer Science

Duquesne University, Pittsburgh, PA

- Grading C++ and Visual Basic programs, additional tasks include administering tests.

Activities and Awards

Student Volunteer

- ACM Symposium on Virtual Reality Software and Technology (VRST) 2007
- IEEE Virtual Reality 2007
- IEEE Virtual Reality 2006
- 5th International Workshop on Virtual Rehabilitation (IWVR) 2006
- HCI-International 2005

Honors and Awards

- Presentation on “*Two Hands Up: Exploring Bimanual Task Division for 3D Volumetric Selection*” won 3rd Place in Category III: Computer Science at the 7th Annual Niner Research Across the Disciplines Graduate Research Fair, UNC-Charlotte, 2007.
- Presentation on “*Effects of Virtual Human Presence on Task Performance*” won 2nd Place in Category II at the 5th Annual Niner Research Across the Disciplines Graduate Research Fair, UNC-Charlotte, 2005.
- GASP Graduate Fellowship, 2006, 2007, 2008
- Giles Graduate Fellowship, 2004, 2005
- Duquesne Presidential Merit Scholarship
- Alcoa Computer Science Scholarship
- Thomas Winschel Scholarship
- Mathematics Association of America (MAA) Award for Student Presentation at Mathfest 2002
- Dean’s List, Duquesne University, 1999 – 2003, 8 times

University Organizations

- ACM-W, member
- Pi Mu Epsilon Mathematics Fraternity, member
- Omicron Delta Kappa (ODK) national honors society, member
- Golden Key national honors society, member
- Mortar Board national honors society, member
- Duquesne Computer Science Club 1999-2002 member, 2002-2003 (president)

Graduate Courses

Visual Communication, Human-computer Interaction, Research Methodologies, Virtual Environments, VE Development, Information Visualization, Graduate Research Seminar, Digital Image Processing, Computer Vision, Computer Graphics, Software Systems and Design, Computer Communication and Networks