Daniel Shawn Coming

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EDUCATION

Doctor of Philosophy in Computer Science December 2007 Dissertation: *Multi-Body Collision Detection* Advisor: Oliver Staadt	University of California, Davis Major in Computer Graphics Minor in Computational Theory Cumulative 3.91/4.0 GPA
Master of Science in Computer Science June 2006	University of California, Davis Cumulative 3.91/4.0 GPA
Bachelor of Science in Computer Science June 2002	University of Nevada, Reno Minor in Mathematics Magna Cum Laude, Honors Diploma Cumulative 3.84/4.0 GPA
Valedictorian June 2000	Bonanza High School, Las Vegas, Nevada Cumulative 4.0/4.0 GPA (4.7/4.0 weighted)

PROFESSIONAL EXPERIENCE

2009–Present	Adjunct Assistant Professor, Department of Computer Science and Engineering, University of Nevada, Reno
2007–Present	Assistant Research Visualization Scientist, Center for Advanced Visualization, Computation and Modeling, Desert Research Institute
2003–2007	Graduate Student Researcher, Institute for Data Analysis and Visualization, University of California, Davis
2006	Graduate Intern Technical, Graphics Engineering, Intel Corporation
2005–2006	Teaching Assistant, Department of Computer Science, University of California, Davis
2001	Undergraduate Research Assistant, Cortex: Beowulf Cluster for NeoCortical Brain Simulation, University of Nevada, Reno

PUBLICATIONS

Journals

Daniel S. Coming and Oliver G. Staadt, "Velocity-Aligned Discrete Oriented Polytopes for Dynamic Collision Detection". In *IEEE Transactions on Visualization and Computer Graphics*, (14)1: pp. 1–12, 2008.

Daniel S. Coming and Oliver G. Staadt, "Kinetic Sweep and Prune for Multi-body Continuous Motions". In "Virtual Reality Interaction and Physical Simulation", *Computers & Graphics: An International Journal of Systems & Applications in Computer Graphics* (30)3: pp. 439–449, 2006.

Refereed Conferences

Steven Koepnick, Derek Norpchen, William R. Sherman, Daniel S. Coming, “Immersive Training for Two-Person Radiological Surveys”, In Proceedings of IEEE Virtual Reality, IEEE VR, 2009. [To appear]

Brian C. Budge, Daniel S. Coming, Derek Norpchen, and Kenneth I. Joy, “Accelerated Building and Ray Tracing of Restricted BSP Trees”, In Proceedings of Interactive Ray Tracing, RT 2008, pp. 167–174. 2008.

Daniel S. Coming and Oliver G. Staadt, “Stride Scheduling for Time-Critical Collision Detection”, In Proceedings of 3D Data Processing, Visualization and Transmission, 3DPVT 2008, pp. 113–120. 2008.

Daniel S. Coming and Oliver G. Staadt, “Stride Scheduling for Time-Critical Collision Detection”, In Proceedings of ACM Virtual Reality Software and Technology, VRST 2007, pp. 241–242. 2007.

Daniel S. Coming and Oliver G. Staadt, “Kinetic Sweep and Prune for Collision Detection”, In Proceedings of the Second Workshop in Virtual Reality Interactions and Physical Simulations, VRIPHYS’05, pp. 81–90, 2005. **Best Paper Award**

Technical Papers

Daniel S. Coming “Many-Body Collision Detection”. Ph.D. dissertation, Department of Computer Science, University of California, Davis, December, 2007.

Daniel S. Coming and Oliver G. Staadt, “Velocity-Aligned Discrete Oriented Polytopes for Dynamic Collision Detection”. Technical Report CSE-2004-25, Department of Computer Science, University of California, Davis, September 2004.

INVITED TALKS

Daniel S. Coming, Patrick O’Leary, William R. Sherman, Alison Murray, Christian Reisenfeld, and Vivian Peng, “Enabling Scientific Workflows Using Immersive Microbiology Imaging”, Presented in the Workshop on Scientific Workflow with Immersive Interfaces for Visualization at IEEE Visualization, IEEE Vis 2008, October 21, 2008.

Daniel S. Coming and Oliver G. Staadt, “Fast Multi-Body Dynamic Collision Pruning: So Many Donuts, So Little Time”, Presented in the Doctoral Seminar at the Symposium on Interactive 3D Graphics and Games, I3D 2006, March 16, 2006.

GRANTS and FELLOWSHIPS

2007–2009	*Laboratory for Advanced Environmental Modeling and Visualization*, Co-PI (10/2008–7/2009), Senior Personnel (10/2007–9/2008), with William Sherman (PI), DoD-STTC, $11,846,618
2005	Travel Award from Graduate Group in Computer Science, $1,000
2003	HP-CITRIS Graduate Fellowship, University of California, Davis, $10,000
2003	GAANN Fellowship, University of California, Davis, $18,000

2001	DoE EPSCoR Undergraduate Research Grant
2000–2002	Robert C. Byrd Scholarship
2000–2002	Millennium Scholarship (first recipient to graduate), $10,000
2000–2002	Presidential Scholarship, University of Nevada, Reno
2000–2001	General Engineering Scholarship, University of Nevada, Reno

GRANT PROPOSALS UNDER CONSIDERATION

2009–2012	DIFF: Data-Interactive Fusion Framework for Visualization of Planetary Surface Processes, CO-PI with William Sherman (PI) and CO-PIs Phil McDonald, Nick Lancaster, Mike Kaplan, and Wendy Calvin, $1,293,960
2009–2011	PLASTIC: Portable Logical Abstraction to Support Task Interfaces for Computing, PI with Co-PI William Sherman, $499,136
2009–2011	PLAI Vis: Platform Layer for Adaptive Interfaces for Visualization, PI with CO-PIs William Sherman and Phil McDonald, $1,147,722
2009–2010	Planning IVRI - Immersive Visualization Research Infrastructure, PI with Co-PI William Sherman, $99,988

TEACHING EXPERIENCE

Topics in Advanced Computer Science - Algorithms and Complexity (Scheduled Spring 2009)
Computer Architecture
Data Structures and Programming (TA)
Basic Concepts of Computing (Introduction to programming for non-CS majors) (TA)

ACADEMIC SUPERVISION

Steven Koepnick, Master's Student currently under Supervision
Department of Computer Science and Engineering, University of Nevada, Reno
Expected Graduation August 2009.

RESEARCH INTERESTS

Multi-dimentional and spatial data structures and algorithms, computer graphics, visualization, virtual reality, human-computer interaction.

MAJOR PROJECTS

2007–2009	Project Manager, Civil Support Team Virtual Reality Radiological Survey Training
2003–2007	Dissertation Research, Acceleration Structures for Multi-Body Collision Detection
2002	Project Manager, Mine Evac: Underground Mine Evacuation Training Simulator
2001	Undergraduate Research, Cortex: Beowulf cluster for NeoCortical Brain Simulation

AWARDS

2005	Best Paper Award at VRIPHYS'05 for Kinetic Sweep and Prune
2003	Special Recognition for Academic Accomplishments in Nevada State of the State Address by Governor Guinn
2001	William Lowell Putnam Math Competition, Score: 22, National Rank: 365
2000–2002	Dean's List, University of Nevada, Reno
2000	Eagle Scout, Boy Scouts of America. Organized and led 19 volunteers in 6000 square foot graffiti removal project in North Las Vegas

SERVICE

Area Chair, Visualization, International Symposium on Visual Computing, 2009.

Special Track Chair, "Visualization and Simulation on Immersive Display Devices," International Symposium on Visual Computing, 2008.

Exhibits Chair, IEEE Virtual Reality, 2008.

Program Committee
- Symposium on Visual Computing, 2008
- 3D Data Processing, Visualization and Transmission, 2008

Reviewer for journals
- *Computer Graphics Forum*
- *Computers & Graphics*

Reviewer for conference proceedings
- Eurographics, 2009
- IEEE Virtual Reality, 2009
- Virtual Reality Interactions and Physical Simulations, 2007

Member of ACM SIGGRAPH, IEEE Computer Society, and Eurographics

COLLABORATORS AND CO-AUTHORS

Oliver G. Staadt[1], Dissertation Advisor
Brian C. Budge[2]
Kenneth I. Joy[2]
Frederick C. Harris[3,4]
William R. Sherman[3]
Derek Norpchen[3]
Philip McDonald[3]
Patrick O'Leary[5]

1. University of Rostock, Germany
2. Institute for Data Analysis and Visualization, University of California, Davis
3. Desert Research Institute
4. University of Nevada, Reno
5. Idaho National Lab