

# Loren Olson

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## Experience

### **Clinical Associate Professor — 2018-present**

#### **Clinical Assistant Professor — 2009-2018**

School of Arts, Media and Engineering, Arizona State University

Developed and teaching new courses for the Digital Culture program: Programming for Media Arts; Programming for the Web; Animating Virtual Worlds; Programming for Social and Interactive Media, Mac Development for Media Arts, and Mobile Development. I also lead one section of the project based classes: Collaborative Projects and Research; Capstone I and II. I have conducted research in the Mixed Reality Rehabilitation, Learning Environments, and Digital Culture Creative Classrooms (DC3) research groups at AME. I supervise the technology support staff for AME and Digital Culture. I serve on the AME Executive Committee and the Digital Culture Undergraduate Committee. I have served on multiple search committees for AME and the Herberger Institute. I led the creation of the Digital Culture Summer Institute - a summer program for Junior High and High School students.

### **Associate Research Technologist for Multimedia — 2004–2009**

Arts, Media and Engineering Program, Arizona State University

Activities at AME include: Chair of the Technology Panel, supervising four staff providing technical support for AME facilities and research projects. Developing software for visual component of the Mixed Reality Rehabilitation project. Leading development of web based, departmental performance review application. Led technical production crew for motion<sup>e</sup> at world premier event at Galvin Theatre in Tempe, AZ, at Lincoln Center in New York and at Monaco Dance Forum. Created visuals for interactive multimedia performance of Lucidity at Galvin Theatre in Tempe, AZ.

### **Lecturer - Digital Animation and Rendering — 2003–2004**

Arts, Media and Engineering Program, Arizona State University

Created animation and visualization of motion capture data for the motion<sup>e</sup> project, developing software for realtime feedback of motion analysis and software to enable the network communications among different applications for motion<sup>e</sup>. Co-directed with David Birchfield the Haunted When It Rains project, an interactive, multimedia theater event. Developed realtime graphics and networking software for the Rehabilitation prototype project. Developed and taught interdisciplinary graduate course Advanced Digital Animation and Rendering.

### **Freelance Technical Director — 2003**

Worked as technical director creating a networked, distributed, remote studio pipeline, technical setup, and character rigging for cinematic animations for the console game "I Ninja." The game is distributed by Namco and available for Playstation 2, Xbox and Gamecube. The cinematics were designed and directed by Don Bluth.

### **Senior Technical Director — 1988–2002**

Rhonda Graphics Inc., Phoenix, AZ

Responsible for the creation of animation for film and television projects. As Lead Technical Director, responsible for determining the best methods and techniques for creating animation and effects for productions, and creating custom tools and new techniques as productions required them. Led the development of studio work pipeline for creation of half-hour children's show "Musicland Band". Developed custom software to speed the flow of images from animators to editor, improving the integration of animation software (Maya) and editing software (Final Cut Pro). Responsible for studio software setup and integration to allow efficient production workflow and maximum throughput for CGI rendering.

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### **Education**

Arizona State University, B.S. Computer Science, 1988

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### **Important Software Development Work**

Co-creator and developer with David Tinapple of CritViz. CritViz is a web based application to enable peer critique in large classrooms. We made CritViz to use in our classes in the Digital Culture program, and it is also being used in a other classes at ASU. To date we have had more than 250 CritViz courses run, with more than 4800 registered users, more than 2000 course assignments created, and more than 390000 student assignment answers.

Lead developer of Dash. Dash is an application for creating interactive 3d environments created at the Arts, Media and Engineering Program at Arizona State University. Dash was originally created to visualize motion capture and motion analysis data in realtime for work being done for the motion<sup>e</sup> project. Dash is used to create the visual feedback for the Biofeedback for Rehabilitation project. Dash created the visuals for the interactive performance of Lucidity, April 10, 2005 at Galvin Playhouse. In January 2006 I used Dash in a collaboration with my colleague, musician David Birchfield, in creating an installation art work "Community Art: SMOCA" at the Scottsdale Museum of Contemporary Art. Dash has also been used for visualization during the development of the AME pressure sensitive floor. Dash was used as the primary visual platform for Smallab - part of the AME K-12 Embodied and Mediated Learning project. Dash was used for interactive visuals in the Mediating Complex Systems research project.

Lead developer for Eval, a web application for tracking and evaluating research activity at the Arts, Media and Engineering Program. Eval is a Ruby on Rails application that allows researchers in a highly collaborative environment to record and share information about research activity. The application eliminates duplication of effort in recording activity, limits incorrect data entry, and enables efficient administrative reporting and evaluation.

Lead developer for the Digital Culture initiative web application. The Digital Culture web application is an online interactive map that allows students to discover different possible paths thru the common digital culture course offerings. Students are able to interactively browse courses offered, discover course requirements and outcomes, and create a schedule that fulfills requirements for a series of courses.

I am a mobile app developer, as an independent developer and as a contractor. For the iOS game "MarbleArt" I created the entire app myself (<https://itunes.apple.com/app/id475648787>) and released it as an independent project. For the app "Metallic Spheres" (<https://itunes.apple.com/us/app/metallic-spheres/id394248595>) I worked as a contractor creating the graphics and interaction code. Metallic Spheres was released by Sony Music Entertainment for the band The Orb featuring David Gilmour. For the app "Inception: Mobile Architect" (<https://itunes.apple.com/us/app/inception-mobile-architect/id405365239>) I worked as a contractor creating effects and interaction code. Inception was released by Warner Bros. Entertainment as a promotional effort in support of the DVD release of the movie Inception.

Developed Vicon Reflector. The Vicon Reflector allowed AME to seamlessly transition from Vicon to Motion Analysis motion capture systems, allowing the motion<sup>e</sup> and Biofeedback projects to continue work without needing to recode and reconfigure due to the new mocap system. The reflector connects to Motion Analysis EVaRT and simulates the Vicon Tarsus server software for client applications on a network.

Responsible for setup and maintenance of Discreet Flame system for creation of visual effects. The Flame system runs on the SGI Onyx platform, with a high speed disk array that allows real time, uncompressed high quality video input and output. Developed 35 “Sparks” - plugin modules for the Flame system. These modules provided additional image processing functionality used by the artists at RGfx.

Developed software called img2mov to batch process the conversion of image sequences into Quicktime movies, with annotation for date, sequence, scene name and frame numbers. This software made the studio much more efficient during a long format project, allowing large numbers of scenes to be easily moved from rendering to editing.

Developed software called psobj to translate Adobe Illustrator artwork into the “obj” format to use with Wavefront animation software. Psobj was sold to a number of other studios. Responsible for the development of importEPS - a Maya plug-in to import Adobe Illustrator artwork into the Maya animation system. (This was one of the first Maya plug-ins developed outside Alias|Wavefront, completed before the official release of the software.)

Developed software called medit3d to provide a graphical interface to the Wavefront image renderer procedural texture system. This software was bought by Wavefront and distributed with the Advanced Visualizer animation system.

Developed software (called bend) to create animated nonlinear deformations and freeform deformations (also known as lattice boxes) for use with the Advanced Visualizer animation system. Developed a particle animation and rendering system called ps. This software was used for numerous projects before the existence of any commercial particle systems software.

Developed software called avcp, for Abekas Video Systems, to provide a graphic control panel on SGI workstations for the Abekas A65 Digital Disk Recorder.

Developed software called acp to provide a graphic control panel on a SGI workstation for the Abekas A60 Digital Disk Recorder. Acp was later distributed by Abekas, and SGI as part of the SGI developer CD.

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## Publications

Rikakis, T., Tinapple, D., and Olson, L. (2013). The Digital Culture Degree: A competency-based interdisciplinary program spanning engineering and the arts. Accepted for publication in proceeding of Frontiers in Education Conference 2013.

Sadauskas, J., Tinapple, D., Olson, L. & Atkinson, R. (2013). CritViz: A Network Peer Critique Structure for Large Classrooms. In . Jan Herrington et al. (Eds.), Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications 2013 (pp. 1437-1445). Chesapeake, VA: AACE.

Tinapple, D., Olson, L. and Sadauskas, J. (2013). CritViz: Web-Based Software Supporting Peer Critique in Large Creative Classrooms. In Bulletin of the IEEE Technical Committee on Learning Technology, Volume 15, Number 1, January 2013. 29-35.

Tinapple, D., Sadauskas, J., & Olson, L. (2013). Digital culture creative classrooms (DC3). Proceedings of the 12th International Conference on Interaction Design and Children – IDC '13 (pp. 380–383). New York, NY, USA: ACM Press. doi:10.1145/2485760.2485803

Lehrer N., Rajko S., Siwiak D., Wallis I., Baran M, Chan M., Kidane A., Koziupa T., Olson L., Tinapple D. Thrii, ACM Multimedia 2010.

David Birchfield, Ellen Campana, Sarah Hatton, Mina Johnson-Glenberg, Aisling Kelliher, Loren Olson, Christopher Martinez, Philippos Savvides, Lisa Tolentino, and Sibel Uysal. 2009. Embodied and mediated learning in SMALLab: a student-centered mixed-reality environment. In ACM SIGGRAPH 2009 Emerging Technologies (SIGGRAPH '09). ACM, New York, NY.

Y. Chen, H. Sundaram, T. Rikakis, L. Olson, T. Ingalls and J. He (2008), "Experiential Media Systems - The Biofeedback Project, in Multimedia Content Analysis: Theory and Applications", A. Divakaran (eds.), Springer Verlag, Oct. 2008.

Isaac Wallis, Todd Ingalls, Thanassis Rikakis, Loren Olson, Yinpeng Chen, Weiwei Xu, Hari Sundaram. "Realtime Sonification of Movement for an Immersive Stroke Rehabilitation Environment." International Conference on Auditory Display (ICAD 2007), Montreal, Canada, 2007.

Yinpeng Chen, He Huang, Weiwei Xu, Richard Isaac Wallis, Hari Sundaram, Thanassis Rikakis, Todd Ingalls, Loren Olson, Jiping He; "The Design of a Real-Time, Multimodal Biofeedback System for Stroke Patient Rehabilitation." ACM Multimedia 2006.

Yinpeng Chen, He Huang, Weiwei Xu, Richard Isaac Wallis, Hari Sundaram, Thanassis Rikakis, Todd Ingalls, Loren Olson, Jiping He; "A Real-Time, Multimodal Biofeedback System For Stroke Patient Rehabilitation" (demo paper) ACM Multimedia 2006.

J. James, T. Ingalls, G. Qian, L. Olson, D. Whiteley, S. Wong, T. Rikakis, "Movement-based Interactive Dance Performance." Proceedings of SIG ACM Multimedia 2006. Santa Barbara, California

He Huang, Todd Ingalls, Loren Olson, Kathleen Ganley, Thanassis Rikakis, Jiping He; "Interactive, Multimodal Biofeedback System for Task-Oriented Neural Rehabilitation"; IEEE-EMBC 2005, Shanghai, China.

D. Whiteley, G. Qian, T. Rikakis, J. James, T. Ingalls, S. Wong, L. Olson "Real-Time Tracking of Multiple People from Unlabelled Markers and Its Application in Interactive Dance," Proceedings British Machine Vision Conference. Oxford, UK, September 5-8. 2005.

H. Huang, K. Ganley, T. Ingalls, L. Olson, T. Rikakis, J. He, "Multimodal Biofeedback as a Training Tool Following Stroke," Society for Neuroscience. Program No. 989.25. 2005.

Huang H, He J, Rikakis T, Ingalls T, Olson L. "A new framework of biofeedback system for neural rehabilitation." Biomedical Engineering Society Fall meeting. 2004.

H. Huang, J. He, T. Rikakis, T. Ingalls, L. Olson, "Design of biofeedback system to assist the robot-aided movement therapy for stroke rehabilitation," Society for Neuroscience. Program No. 181.18. 2004.

G. Qian, F. Guo, T. Ingalls, L. Olson, J. James, T. Rikakis, "A Gesture-Driven Multimodal Interactive Dance System," IEEE, International Conference on Multimedia and Expo. Taipei, Taiwan, China. June 27-30. 2004.

T. Ingalls, T. Rikakis, J. James, G. Qian, L. Olson, F. Guo, S. Wong, "A Movement Recognition Engine for the Development of Interactive Multimedia Works," The Society for the Study of Artificial Intelligence and Simulation of Behaviour. Motion, Emotion and Cognition - ConGAS Symposium on Gesture Interfaces for Multimedia Systems. University of Leeds, UK. March 29-30. 2004.

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## Conference presentations

David Birchfield, Ellen Campana, Sarah Hatton, Mina Johnson-Glenberg, Aisling Kelliher, Christopher Martinez, Loren Olson, Philippos Savvides, Lisa Tolentino, Kelly Phillips, Sibel Uysal "Embodied and Mediated Learning in SMALLab: A Student-Centered Mixed-Reality Environment" SIGGRAPH 2009 Emerging Technologies.

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## Important Production Work

- Immerge (2012, an interactive performance at Emerge conference) - visual artist / developer
- motion<sup>e</sup> (2006 at Monaco Dance Forum) - td
- Community Art: SMOCA (2006) - visual artist / developer
- motion<sup>e</sup> (2005) - td / developer
- Lucidity (2005) - visual artist / developer
- I Ninja (2003) - td
- Phoenix Suns TV Open '02-'03 (2002) - animator / td / compositor
- Jungle Jam Demo (2002) - td / compositor
- Arizona Diamondbacks TV Open '02 (2002) - animator / td / compositor
- Bank One Ballpark Diamondbacks Open '02 (2002) - animator / td / compositor
- MusiclandBand, We Stick Together Like Glue (2001) - animator / td / compositor
- Phoenix Suns TV Open '01-'02 (2001) - animator / td / compositor
- Phoenix Coyotes TV/Arena Open '01 (2001) - td / compositor
- Shamrock Farms Cottage Cheese (2001) - animator / td / compositor
- Arizona Diamondbacks TV Open '01 (2001) - animator / td / compositor
- Phoenix Suns TV Open '00-'01 (2000) - animator / td / compositor
- America West Arena Suns Open '00-'01 (2000) - animator / td / compositor
- Honeywell CAS-100 Promo (2000) - modeler / td
- Arizona Diamondbacks TV Open '00 (2000) - animator / td / compositor
- Titan A.E., Fox Animation Studios (2000) - animator / td
- Arizona Lottery "Pick" (1999) - td
- Phoenix Suns TV Open '99-'00 (1999) - animator / td / compositor
- Arizona Diamondbacks TV Open '99 (1999) - animator / td / compositor
- Harkins Feature Presentation Trailer (1998) - animator / td / compositor
- Valley Chevy "Moths" (1998) - animator / td
- Bank One Ballpark Diamondbacks Open (1988) - animator / td
- Arizona Diamondbacks TV Open '98 (1998) - animator / td
- Ping "Isopur Putters" (1998) - animator / td
- America West Arena Suns Open '97-98 (1997) - animator / td
- Houston Rockets TV/Arena Open '97-98 (1997) - animator / td
- Valley Chevy "Born Ready" (1997) - animator / td
- Phoenix Mercury Arena Open (1997) - animator / td
- Arizona Rattlers Arena Open (1997) - animator / td
- StarSystem ATM "Pocket" (1997) - animator / td
- Phoenix Suns TV Open '96-'97 (1996) - animator / td
- Gastol Japan (1996) - animator / td
- Valley Chevy "S10 Stampede" (1996) - animator / td / compositor
- Valley Chevy "Lumina" (1996) - animator / td
- Harkins Snack Bar Trailer (1995) - animator / td / compositor
- Charlotte Hornets TV/Arena Open (1993) - animator / td / compositor
- Slamfest, ABC College Basketball (1992) - animator / td
- America West Arena Suns Open '92-'93 (1992) - animator / td / compositor
- KAET-TV station ID (1990) - animator / td / compositor
- Honeywell IASD (1989) - animator / td / compositor

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## **Awards**

2001 Rocky Mountain Emmy Award, Graphics-Non News  
Diamondbacks 2000 TV Open

2001 Rocky Mountain Emmy Award, Graphics-Non News  
Phoenix Suns 2000-2001 Arena Open

1999 Rocky Mountain Emmy Award, Graphics  
Diamondbacks "Ricochet" Stadium Open

1997 Rocky Mountain Emmy Award, Graphics  
Phoenix Coyotes Arena Open

1997 Rocky Mountain Emmy Award, Graphics  
Phoenix Suns Arena Open

1996 Rocky Mountain Emmy Award, Graphics  
Phoenix Suns 1995-1996 TV Open

1995 Rocky Mountain Emmy Award, Graphics - Non News Animation  
Phoenix Suns TV Open

1994 Rocky Mountain Emmy Award, Graphics - Non News Animation  
Phoenix Suns Arena Open

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## **Associated Professional Experience**

Instructor for Arizona State University, Programs for Talented Youth 2007-2011.

Instructor for Herberger College at Large, teaching Digital Animation course, 2005-2008.

Speaker at the Scottsdale Museum of Contemporary Art for "Southwest Techno," February 2006.

Speaker at the Vicon User Group meeting at Siggraph 2004 in Los Angeles.

Speaker at the 2000 3December Arizona event. Alias|Wavefront sponsored celebration of animation, presented recent animation work.

Speaker at the 1998 Alias|Wavefront Global User Association meeting at Siggraph '98 in Orlando. Presentation before about 2000 users about using the new Maya animation system.

Speaker at the January 1998 Maya Launch event for Alias|Wavefront.

Speaker at the December 1997 "Maya Unwrapped" press event in Toronto. Brought in by Alias|Wavefront to talk to the press as an expert user who was using the new Maya animation system.

Guest demo artist for Abekas Video Systems at NAB 1994 and NAB 1995 for Digital Disk Recorder systems.