

Daniel Acevedo

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## Education

- *Brown University*, Providence, RI.  
Ph.D., Computer Science, October 2007.  
Sc.M., Computer Science, May 2001.
- *University of A Coruña*, Spain.  
B.Eng. Civil Engineering, September 1997. Final grade: A. Ranking #2 class of 1997.
- *Associate Member of Sigma Xi, The Scientific Research Society.*
- *Student Member of the Association for Computing Machinery.*

## Research Experience

- *Sept/98 - present*  
With Brown University Department of Computer Science's Graphics Group. Research in Scientific Visualization and Virtual Reality applications and interfaces.  
PhD thesis: "*A Framework for the Perceptual Optimization of Multi-valued Multi-layered 2D Scientific Visualization Methods.*"  
Master's project: "*ARCHAVE. A Virtual Reality Environment for Archaeological Research.*"
- *Sept/95 - Aug/98*  
Researcher with University of A Coruña School of Civil Engineering, in its Group of Visualization for Engineering and Urban Design (VideaLAB), and in its Department of Theory of Structures.

## Professional Goals and Experience

Due to my engineering background, I believe in creating products that help scientists solve real problems, while my research background makes me focus on advancing the state of the art in graphics and scientific visualization.

I have had the opportunity of working alongside expert researchers in fields as diverse as Archaeology, Cognitive and Perceptual Science, and Art and Illustration. This has taught me how to quickly learn about new problems and effectively communicate with investigators in many disciplines. I have presented my work many times before different audiences, a skill that requires practice and continuous learning, but one that I am proud to bring to my future career.

I am proficient in programming languages such as C++, Java, and PERL. My everyday research work involves the use of various graphics and visualization software and APIs such as OpenGL, G3D, WorldToolkit, and AVS. I also have extensive experience with 3D modeling software such as AutoCAD, 3D Studio, Maya, and Softimage, as well as GIS software such as ESRI's ArcGIS.

My professional goal, both as an engineer and a research scientist, is to continue my career in industry by combining and applying my expertise in scientific and information visualization, computer graphics, human computer interaction, user interface design, virtual reality, human perception, 3D modeling, terrain visualization, and civil engineering.

## Projects

- Lead on the EVOLVIS project at Brown's Visualization Research Group. In-house software for 2D scientific visualization and experimentation of perceptual issues.
- Lead on the ARCHAVE project to create a virtual reality application for archaeology research and visualization.
- Co-author and active collaborator on virtual reality projects such as CavePainting and Bat Flight Visualization. Directly involved in the development and maintenance of our virtual reality facility and related software.
- Actively involved in the maintenance and development of the Visualization Research Lab's software infrastructure for all projects. It includes multi-platform capabilities for easy transfer of projects among collaborators.
- Lead and webmaster for the Visualization Research Lab's website. It includes the updating of publication and bibliography records and many fully interconnected sections to facilitate its use as a research tool.

## Awards

- *Paris Kanellakis Fellowship*. Computer Science Department, Brown University, 2007.
- *Best Poster Award* at IEEE Visualization 2005 Conference. Minneapolis, MN. October 2005.
- *Best Case Study Award* at IEEE Visualization 2001 Conference. San Diego, CA. October 2001.
- *Marcelino Botin Foundation Fellowship* (Santander, Spain) for continuing graduate level education at Brown University, Providence RI. 2000-2001 and 2002-2003.
- *Pedro Barrie de la Maza Foundation Fellowship* (A Coruña, Spain) for continuing graduate level education at Brown University, Providence RI, 1998-2000.

## Teaching Experience

- *Teaching Assistant* at Brown University Computer Science Department:  
CS237: Interdisciplinary Scientific Visualization. Fall 2003, Fall 2005.  
CS137: Virtual Reality Design for Science. Fall 2004, Fall 2006.
- *Instructor* for Course on 3D Modeling and Realism. Ferrol (Spain), February 1998. 80 hours.
- *Instructor* for Course on 3D Animation. Ferrol (Spain), November 1997. 20 hours.

## Other Skills and Interests

- I am fluent in written and spoken English. Bilingual in Spanish and Galician (a Spanish dialect very similar to Portuguese.)

## Publications

### Modeling Perceptual Dominance Among Visual Cues in Multilayered Icon-based Scientific Visualizations

Daniel Acevedo, Jian Chen and David H. Laidlaw. *IEEE Visualization'07*, Poster, October '07.

### Subjective Quantification of Perceptual Interactions among Some 2D Scientific Visualization Methods.

Daniel Acevedo and David Laidlaw. *IEEE Transactions on Visualization and Computer Graphics (Proceedings Visualization / Information Visualization)*, 12(5), September-October 2006.

### Using Visual Design Expertise to Characterize the Effectiveness of 2D Scientific Visualization Methods.

Daniel Acevedo, Cullen Jackson, David Laidlaw, and Fritz Drury. *IEEE Visualization'05*, Poster, October '05.

### Color Rapid Prototyping for Diffusion Tensor MRI Visualization.

Daniel Acevedo, Song Zhang, David H. Laidlaw, and Chris Bull. Short Paper on the 7<sup>th</sup> *Int. Conference on Medical Image Computing and Computer Assisted Intervention*, St. Malo, France, September 2004.

### Graphic Design, Art, and Scientific Visualization.

Invited talk. *Cartoon Future Master*. European Association of Animation Film. A Coruña, Spain, April 2004.

### Case Studies in Building Custom Input Devices for Virtual Environment Interaction.

Joseph LaViola, Daniel Keefe, Robert Zeleznik, and Daniel Acevedo. In *VR 2004 Workshop: Beyond Glove and Wand Based Interaction*, Chicago, IL, March 2004.

### Designer-critiqued Comparison of 2D Vector Visualization Methods: A Pilot Study.

Cullen Jackson, Daniel Acevedo, David H. Laidlaw, Fritz Drury, Eileen Vote, Daniel Keefe. In *SIGGRAPH 2003 Sketches and Applications Proceedings*. San Diego, CA. August 2003.

### Design-by-Example: A Schema for Designing Visualizations Using Examples from Art.

Eileen Vote, Daniel Acevedo, Cullen Jackson, Jason Sobel, David H. Laidlaw. In *SIGGRAPH 2003 Sketches and Applications Proceedings*. San Diego, CA. August 2003.

### Discovering Petra: Archaeological Analysis in VR.

Eileen Louise Vote, Daniel Acevedo Feliz, David Laidlaw and Martha S. Joukowsky. In *IEEE Computer Graphics and Applications*. September/October 2002

### Pop Through Buttons for Virtual Environment Navigation and Interaction

Robert Zeleznik, Joseph LaViola, Daniel Acevedo, and Daniel Keefe. In *Virtual Reality 2002*, March 2002.

### Archaeological Data Visualization in VR: Analysis of Lamp Finds at the Great Temple of Petra, a Case Study.

Daniel Acevedo, Eileen Vote, David H. Laidlaw and Martha S. Joukowsky. In proceedings of *IEEE Visualization 2001*. San Diego, California. October 2001.

### CavePainting: A Fully Immersive 3D Artistic Medium and Interactive Experience.

Daniel Keefe, Daniel Acevedo Feliz, Tomer Moscovich, David Laidlaw and Joseph LaViola. In Proceedings of *ACM SIGGRAPH's I3D 2001 Symposium on Interactive 3D Graphics*. North Carolina, March 2001.

### Hands-Free Multi-Scale Navigation in Virtual Environments.

Joseph LaViola, Daniel Acevedo Feliz, Daniel Keefe and Robert Zeleznick. In proceedings of *ACM SIGGRAPH's I3D 2001 Symposium on Interactive 3D Graphics*. North Carolina, March 2001.

### Virtual Reality and Scientific Visualization in Archaeological Research.

Eileen Vote, Daniel Acevedo, Martha S. Joukowsky and David Laidlaw. *VAST 2000: Virtual Archaeology between Scientific Research and Territorial Marketing*. Arezzo, Italy, November 2000.

### ARCHAVE : A Virtual Environment for Archaeological Research.

Daniel Acevedo, Eileen Vote, David H. Laidlaw and Martha S. Joukowsky. Work in Progress report presented at *IEEE Visualization 2000*. Salt Lake City, Utah. October 2000.

### ARCHAVE - A Three Dimensional GIS for a CAVE Environment.

E. Vote, D. Acevedo, M. S. Joukowsky and D. H. Laidlaw, Proceedings of *CAA 2000: Computing Archaeology for Understanding the Past*; Ljubljana, Slovenia; April, 2000.