

Qualifications

I have been an animation programmer for 6 years. My expertise includes various motion control techniques such as *physics-based characters*, *motion capture-driven animations* and *hybrid approach combining simulation and motion data*. I have solid math and physics knowledge related to 3D computer graphics and simulation. Video results of my research: <http://graphics.cs.ucr.edu/projects/step10/step10.avi>

Education

- University of California, Riverside. CS, Ph.D. 2005 – March 2011. Advisor: Dr. Victor Zordan.
Thesis: Goal-directed biped stepping and push recovery with momentum control.
Awards: Dean's Fellowship 2005 – 2007, Dissertation-Year Fellowship 2010.
- National Tsing-Hua University, Taiwan. CS, B.S. and M.S. 1996 – 2002.
Thesis: Automatic conversion from text to character animation.

Work experience

Software Engineer, DreamWorks Animation, Glendale, CA (04/2011 – present)

- Development and support of proprietary animation tools using C/C++, Scons, Eclipse and TotalView.
- Work closely with animators and animation TDs.

R&D intern, DreamWorks Animation, Glendale, CA (10/2010 – 03/2011, 6 months)

- Implemented a modeling tool similar to “move along normal” in MAYA for character TDs.
- Created build and test automation for continuous code integration using Python, Scons and Bamboo server.

Research assistant, University of California, Riverside, CA (09/2005 – 09/2010, 5 years)

- Developed a real-time controller for physics-based characters that perform standing, stepping and walking behaviors using C++, Featherstone's dynamics algorithms and OGRE.
- Designed a momentum supervisor for characters to automatically decide when & where to step under perturbations.
- Implemented a multiobjective optimization to control a character's linear and angular momentum.
- Implemented analytical and numerical IK solvers to control a character's individual limbs and full body.

Teaching assistant, University of California, Riverside, CA (09/2005 – 06/2006, 10 months)

- CS 130: Introduction to Computer Graphics. I taught undergraduates OpenGL, MAYA and MEL script.

Programmer, Computer Center of National Defense University, Taiwan (10/2002 – 04/2004, 1.5 year)

- Developed a web-based service using C#, ASP.NET and SQL server to manage official documents.
50+ university staff used this system on a daily basis.

Selected publications (please see my website for complete publications and animation results)

- Wu, C.C., Zordan, V., **Goal-directed stepping with momentum control**, *ACM SIGGRAPH/Eurographics Symposium on Computer Animation (SCA) 2010*.
- Wu, C.C., Medina, J., Zordan, V., **Simple steps for simply stepping**, *International Symposium on Visual Computing (ISVC) 2008*.

Skills and tools

C/C++, Open Dynamics Engine (ODE), Featherstone's rigid body dynamics algorithms, OpenGL, Python, MAYA Mel, Visual Studio, Eclipse, Linux (gcc, gdb, make), Scons, AccuRev, SVN, C#, ASP.NET, SQL and Matlab.