

NICK PORCINO

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revised April 23, 2013

Profile

Veteran game, film, and robotics creator, with a career spanning Apple][and 8 bit game consoles to on-set virtual reality applications to film making. Focus on architecture, implementation, optimization, strategy, and leadership.

Programming

C/C++, GLSL/HLSL, asm, js webapps, python, lua, lisp, forth, etc. Specializations in AI, animation, audio, and rendering.

Experience

Fourteen years with Lucasfilm, participating and creating with Lucas Learning, LucasArts, Lucas Animation, and Industrial Light & Magic, as a Sr. R&D Engineer.

Part of pioneering film/game collaboration leadership team (http://www.gamasutra.com/php-bin/news_index.php?story=15061).

Architect and lead on tools and content development pipeline. Architect, lead, and key contributor on real-time render engines, audio engines, game physics simulation, and game visual effects. Frequent contributor as optimization specialist on both CPU and GPU.

Contributions on most internally developed LucasArts games since 2001. Contributions to many films, including Iron Man, Star Trek (2008), Rango, Pacific Rim, and several unannounced films currently in production.

Programming lead, one of the designers, and key contributor, on "GWiz," an innovative real-time film-creation tool suite created and delivered under the guidance of George Lucas.

Key contributor and realtime rendering team lead applying interactive technologies to previsualization and on-set visualization during film-making.

Member of Lucasfilm's Patent Steering Committee which develops IP strategy and mentors inventors. Member of Lucasfilm's Cloud task force which developed business policy, researched vendors, performed systems analysis, and investigated technical strategy prior to the creation of remote workforce groups.

Highlights of prior work experience includes:

- Lead of Advanced Technology Group at Disney Interactive (Victoria) - architect, lead, and key contributor of multi-title game engine and content creation and management pipeline.
- Lead of Advanced Technology Group at Sanctuary Woods - architect, lead, and key contributor of multi-title game engine and content creation and management pipeline.
- Research Engineer at Bandai in Tokyo, involved in the introduction of microprocessor, AI, and robotic technology to toys, strategic planning
- Research Engineer at the Canadian Department of National Defense, Royal Roads Military College. Design and development of AI for acoustic navigation and control for autonomous underwater vehicles . Design and development of neuromimetic control architectures for legged locomotion.
- Interphase Technologies, reverse engineering of 8 bit game consoles, creation of cartridge game Aquattack

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Products

Race to Space; Rescue in Space; Circuit Masters, Apple II, Zada Software, 1977-1981, designer, programmer

Aquattack, Colecovision, Interphase Technologies, 1984, designer, programmer

Vehicle Monitoring System, Mobiltex Technologies, 1985, programmer

Architectural VR and Previsualization, Cornerstone Technologies, 1991, designer, programmer

Shelley Duvall's It's a Bird's Life, 3DO, Sanctuary Woods, 1993, programmer, engine architect

Ripley's Believe it or not - The Riddle of Master Lu; Orion Burger, Windows and Mac, Sanctuary Woods, 1995-1996, programmer, engine architect, technology group lead

Ready to Read With Pooh; Hotshots; Hades' Challenge; Adventures in Typing, Windows and Mac, Disney Interactive, 1997-1999, programmer, architect, technology group lead

Star Wars Super Bombad Racing, PS2, Lucas Learning, 2001, AI, gameplay, physics, special effects programmer.

Jedi Starfighter; Bounty Hunter; Red Rock RTX; Gladius, PS2 and Xbox, LucasArts. 2002 - 2004. Wrote animation systems, effects systems, audio engine. Architect and team lead for the development of cross platform high performance rendering library. Optimization. DCC tools.

Star Wars The Force Unleashed, X360, PS3, LucasArts. 2008. Wrote the game loop. Further development of animation system. Architected and developed effects system. Architected and led development of audio engine. Optimization. Spearheaded the effort to adapt ILM's film production tools to games.

Zeno, Linux and Windows. Industrial Light & Magic. 2003-2013. Led porting of ILM's Zeno content creation tool to Windows. Created major and minor functionality. Optimization, maintenance, troubleshooting. Led interactive rendering team 2012-2013.

Indiana Jones, Iron Man, Star Trek X and XI, Rango, Red Tails, Pacific Rim, films - 2008-2013, Industrial Light & Magic. Development and optimization of interactive rendering. Development and optimization of rigging technology for use on mocap stage. Work with device drivers. Optimization of geometry handling. Interactive cloud rendering. Development of animation tools. Advising production crews on set up and optimization of assets and workflows. Helped with integrating OpenSteer into animation systems.

Unannounced Films, 2011-2013. Prototyping of new film making tools and rendering technologies to aid in the bidding and technology exploration process.

Clone Wars, TV series - 2008-2012. ILM. Significant development on Zviz previsualization tool.

GWiz, previsualization tool designed by George Lucas. 2009-2011. ILM. Architecture, co-designer, technology lead, key contributor.

Augmented cinematography - on set previsualization and performance capture. 2011-2013. ILM. Contributions to design and architecture. Interactive rendering team lead, programmer.

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Patents

Patrick Conran, Domenico Porcino, **Retaining a surface Detail**, U.S. Patent 8174528, May 8, 2012

Joshua Goldenberg, Lucas A. Kovar, Domenico Porcino, Louise Rasmussen, Adam Schnitzer, **Copying an Object in an Animation Creation Application**, U.S. Patent Application US20120226983 A1, Patent Pending

Adam Schnitzer, Joshua Goldenberg, Kent Oberheu, Domenico Porcino, Louise Rasmussen, **Editable Character Action User Interfaces**, U.S. Patent Application US20120327088 A1, Patent Pending

Domenico Porcino, **Controlling Robotic Motion of Camera**, U.S. Patent Application US20100149337 A1, Patent Pending

Publications

Hexapod gait control by a neural network, 1990 IJCNN International Joint Conference on Neural Networks, pp. 189-194

Nick Porcino, James S. Collins, **An application of neural networks to the guidance of free-swimming submersibles**, 1990 IJCNN International Joint Conference on Neural Networks

Alexander Nareyek, Nick Porcino, Mark Kolenski, **AI interface standards: The road ahead**. A Roundtable Discussion of the 2003 Game Developers Conference, March 2003

An Architecture for A-Life, AI Game Programming Wisdom 2, pp. 339-350, Charles River Media, 2003

Gaming graphics: The road to revolution, ACM Queue, vol 2 , no 2, p62, 2004

Writing a verlet-based physics engine, Game Programming Gems 4, pp. 231-239. Charles River Media, 2004

Insect AI 2: Implementation Strategies, AI Game Programming Wisdom 3, pp. 189-204, Charles River Media, 2006

Steve Sullivan, Chris Williams, Nick Porcino, David Bullock, **LucasArts and ILM: a course in film and game convergence**, International Conference on Computer Graphics and Interactive Techniques: ACM SIGGRAPH 2007 courses: San Diego, California

Content tools & film use of Direct 3D 10, International Conference on Computer Graphics and Interactive Techniques: ACM SIGGRAPH 2007 courses: San Diego, California

Open Source

Significant contributions to **OpenEXR**, the industry standard file interchange format for high dynamic range imagery, and **Alembic**, an industry standard file interchange format for 3d model and animation data. Contributor to **Cinder** creative coding library. Co-maintainer of **OpenSteer** AI steering library. Creator of **LabSound**, a wrapper on the Webkit audio libraries, and **LabMidi**, a MIDI and music creation utility library.

Education

University of Victoria, B.C., Canada — BS in Computer Science, 1991

Professional Organizations

Member of Microsoft's DirectX Graphics Advisory Board, and Intel's Visual Computing Architecture Review Board.