

Craig Reynolds

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<http://www.red3d.com/cwr/>

Skills and background

- Software design and development of user-facing applications and libraries for programmers
- Extensive background in 3d graphics and animation (OpenGL/GLSL, WebGL, Cg, Maya, etc.)
- Experience with many aspects of animation and game production
- Deep expertise in object-oriented programming, functional programming and immutable data
- Experience with evolutionary and classical numerical optimization, machine learning
- Excellent written and oral communication skills, published author, public speaker
- Research publications on: animation, crowds, flocking, steering behaviors, autonomous characters, game AI, parallel algorithms, image processing, optimization, simulate natural complexity.
- Programming languages: C++, Clojure, JavaScript, Java, Matlab, Lisp, ...

Professional Experience

2014 to present: Senior Software Engineer, Vision team at **Matterport**, mobile 3d capture: rendering and efficient algorithms for point cloud processing, surfel fusion, GPGPU programming.

2014 to 2015: Software Engineer at **Staples SparX** on projects including client and server side web applications (in Clojure) and some image processing work (using OpenCV).

2013 to 2014: Research Game Developer at the Center for Games and Playable Media of the **University of California, Santa Cruz**. Developed procedural facial animation and pathfinding for autonomous characters in a "serious game."

1998 to 2012: Senior Researcher at US R&D group of **Sony Computer Entertainment**. Conducted long term research in game technology and worked on teams to make pre-release demos on new game consoles (PS2 and PS3). Created the first interactive flock simulation (*Pigeons in the Park*), an open source library for autonomous characters (*OpenSteer*), set a new performance record for crowd/flock simulation (*PSCrowd*, multi-core PS3 implementation), and created techniques for goal-oriented texture synthesis. Led academic liaison: funding, collaboration, internships.

Education

Massachusetts Institute of Technology, Master of Science (1978) and Bachelor of Science (1975) in Computer Science, theses on procedural animation. Continuing education via online MOOCs: *Artificial Intelligence* by Peter Norvig and Sebastian Thrun (2011), and *Machine Learning* by Andrew Ng (2012).

Professional activities

- **Academy Award** in 1998 for "pioneering contributions to the development of three dimensional computer animation for motion picture production"
- **Editorial board member** for scholarly journals: *Computer Animation and Virtual Worlds*, *Artificial Life*, *Computers in Entertainment* and *Genetic Programming and Evolvable Machines*.
- **Reviewer** for: SIGGRAPH, TOG, SCA, Eurographics, GECCO, Artificial Life, AIIIDE, PLoS ONE
- **Publications:** 18 research papers with a total of 11500 citations, 30 invited talks and keynotes.