

## Benoit Sevigny



Senior Graphics Engineer at Apple, Inc.

Computer Software

<http://www.directoryinventor.com/profile/view/dEKWo5Mp>

## Experience

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### Senior Graphics Engineer

Apple Inc.

Public Company; Computer Hardware

November 2004 - Present

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### Chief Mad Scientist

Kaydara, Inc. (now Autodesk, Inc.)

Computer Software

March 1997 - October 2004

- design/implementation of audio support for FiLMBOX (playback/capture/scrubbing) - design/implementation of a chirp-Z transform algorithm and Award winning VoiceReality (real-time voice recognition for automatic facial animation) - port of Kaydara's real-time core to the NY Hayden Planetarium supercomputer (28-processor SGI Reality Center) - design/implementation of mathematical, I/O and multithreading frameworks (vector/matrix/quaternions, asynchronous I/O and lock-free concurrent data-structures for Intel/PPC/MIPS/Alpha) - design/implementation of a portable OpenGL extension mgmt system - design/implementation of a real-time video processing pipeline for MotionBuilder (Chroma-Keying and Color Correction on GPU(s)) - design and implementation of a portable SIMD framework for SSE/AltiVec/Emotion Engine (PlayStation 2) - design/implementation of a real-time collision detection system for 3D geometry and cloth simulation - vectorization and SIMD port of HumanIK (inverse kinematics for game engines)

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### Lead Engineer

Autodesk

1001-5000 employees; Public Company; Computer Software

January 1994 - March 1997

- port of the GNU compiler collection (gcc) to the IBM Power Visualization System (32-way i860 PVS) - design and implementation of real-time audio resampling for FLAME and FLINT 4.0 - design and implementation of INFERNO/FLAME/FLINT persistent object library for uncommitted editing - design and implementation of a digital signal processing library (including FFT(s) and fast wavelet transforms) - design and implementation of INFERNO 1.0/FLAME 4.0 motion tracker (known as the Stabilizer) - design and implementation of patented Film Grain Management for RIOT and INFERNO (grain analyser, regrain and degrain) - design and implementation of Academy Award winning INFERNO 2.0/FLAME 5.0 motion tracker

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## Lead Programmer

Sipro Lab (now VoiceAge, Inc.)

1-10 employees; Privately Held; Telecommunications

September 1989 - January 1994

- design and implementation of a real-time embedded operating system for a digital circuit troubleshooting unit (including full assembly implementation of the C standard library, floating-point emulation and graphics subsystem) - design of a real-time spectral analyser and digital voltmeter using Zoomed Fast Fourier Transforms

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## Education

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Universit de Montral - Ecole polytechnique de Montral

Computer/Physical Engineering

1988 - 1993

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## Patents (5)

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[Audio view using 3-dimensional plot \(16 worldwide citation\)](#)

Benoit Sevigny

February 1, 2011: 07880748

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[Image processing \(8 worldwide citation\)](#)

Benoit Sevigny

August 1, 2006: 07084879

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[Image processing \(12 worldwide citation\)](#)

Benoit Sevigny

July 25, 2006: 07081898

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[Processing image data \(1 worldwide citation\)](#)

Benoit Sevigny

April 18, 2000: 06052109

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[Processing image data \(6 worldwide citation\)](#)

Benoit Sevigny

July 28, 1998: 05786824

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[View all \(5\)](#)