Jaap Suter

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1738 Parker Street
Vancouver BC V5L 2K8
Canada

Experience

Lead Rendering and Performance Engineer October 2014 - August 2015
Navigate Surgical Technologies Vancouver, Canada

Helped create a novel system for *camera-assisted dental implant surgery*.

- Built a low-latency client-server rendering system, capable of displaying volumetric and polygonal data, replacing an expensive third-party product that lacked critical features.
- Added support for pixel-accurate unwarping of viewports along a cubic spline, enabling quicker and more reliable discovery and visualization of nerve canals in CT data.
- Created the company's automated testing infrastructure, and made continuous integration central to everyday development.
- Delivered an extensive test suite alongside the renderer, verifying overall robustness, relative accuracy, visual fidelity, and DICOM edge-cases. Also included several benchmarks for continuous detection of performance regressions (memory, latency, and frame-rate).
- Found major optimizations in the computer-vision pipeline, contributing a ten-fold reduction in worst-case latency, and a 200% speed-up on average.

Senior Performance and Concurrency Engineer July 2013 - June 2014
Capcom Burnaby, Canada

Brought onto the Dead Rising 3 project for a performance investigation deep dive.

- Built a hot-patching profiler for minimally intrusive timing.
- Discovered significant under-utilization of hardware due to an aging single-core architecture.
- Wrote a task manager to execute work across multiple cores easily and robustly.
- Contributed major speed-ups by parallelizing existing CPU intensive code.
- Raised awareness of concurrency and parallelism through articles and talks.

Android Developer December 2012 - June 2013
AirG Vancouver, Canada

Client-side developer for Hookt, a mobile messaging application.

Happy Hobby Hacker April 2011 - November 2012
Sabbatical Vancouver, Canada

- Built a Structured Light 3D Scanner, testing a novel camera calibration mechanism.
- Wrote a custom CLR host and C#/C++ interop layer to get .NET's Async Await and native Direct3D to play well together.
- Experimented with various web technologies (Ruby, Haml/Sass, CoffeeScript, and Node.js)

Technical Director November 2005 - April 2011
Electronic Arts Burnaby, Canada

- Headed the *Core and Infrastructure* group (11 people), building and maintaining foundational technology used by most EA games.
- Initiated and wrote large parts of *EASharp*, a project to allow C# programming for game consoles (PS3, X360, Wii) through a custom .NET runtime.
- Designed and implemented *Job Manager*; the company-wide solution for task parallelism, used by many EA studios.
- Drove the mobile strategy for EA's shared technology, porting base libraries and build infrastructures to new platforms (iOS, Android, etc.).

Senior Programmer - *Next Level Games* 2004 - 2005 - Vancouver, Canada

Xbox SKU Lead and Generalist SE - *Electronic Arts* 2002 - 2004 - Burnaby, Canada

Pocket-PC Developer - *Overloaded* 2002 - Amsterdam, The Netherlands

R&D Graphics Engineer - *Davilex Games* 1999 - 2002 - Houten, The Netherlands

Education

B.Sc. in Computer Science - *Twente University* 1998 - 2002 - Enschede, The Netherlands

Skills

- Delivers solutions that are robust, accessible, elegant, and of high performance.
- Strong advocate of test driven, agile, and pragmatic development.
- Comfortable managing logical and physical aspects of large multi-language cross-platform projects.
- Passionate about concurrency/parallelism, knows how to leverage heterogeneous multi-core architectures.
- Responsible performance engineer (no guesses, bottlenecks first, profiler-driven, and test-verified).
- Expert C++ programmer, comfortable with the STL, Boost, and C++ 11/14.
- Expert C# programmer, experienced with Linq, RX, Async Await, and the .NET runtime internals.
- Experienced HLSL shader author, both for graphics and compute (GPGPU).
- Experience writing C and assembly for embedded devices.
- Dabbled in: Python, Ruby, CoffeeScript, Java/Xtend, Assembly (x86/64, ARM/Neon, Cell SPU).
- Platforms: Win32/64, Xbox (360, One), PS3 (PPU/SPU), Android, iPhone, Wii, PS2, Gamecube, GBA

Publications

Suter J. (2003) - **Geometric Algebra Primer** - An introduction to Clifford Algebra
(available online at `http://www.jaapsuter.com/geometric-algebra/`).

Credits

Dead Rising 3 (2014)	FIFA Soccer 2005 (2004)	Snowboard Jam (2002)
Burnout Paradise (2009)	UEFA Euro 2004 (2004)	Nim & Lost Garden (2002)
NBA Street (2007)	FIFA Soccer 2004 (2003)	Magnets (2002)
NFS: Carbon (2006)	The Sims Bustin' Out (2003)	US Racer (2002)
Super Mario Strikers (2005)	US Racer (2002)	DaviTuin/Woon 3D (2000)