

ERIK HILL

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EXPERIENCE

Programmer Analyst II, CHMPR* / Experimental Game Lab Apr. 2007 – Present
University of California, San Diego

- Lead developer for "Scalable City", an algorithmically generated 3D game environment, written in C++
- Reduced city loading bandwidth by 80% by embedding deterministic generators into client
- Devised simpler, 5x faster approach to replace IK solution for joint-based city architecture construction
- Developed mesh generation/animation techniques, atmospheric pollution system, navigation system
- "Scalable City" releases: Siggraph('07), Exploratorium('08), exhibitions in Europe, China, Brazil, etc.
- Created Gulf Oil Spill visualization utilizing NOAA wind/current models & elevation data, embedded geo-located photos, led to pending \$100K / year in additional lab funding

Graduate Student Researcher, Experimental Game Lab Jan. 2005 – Mar. 2007
University of California, San Diego

- Developed 3D animated, procedural road system & landscape generation plug-in for Maya
- Improved asset position data lookup times from $O(\log n)$ to $O(1)$

Programming Intern, High Moon Studios July 2005 – Mar. 2007
Carlsbad, California

- Developed pose caching tool for Maya, utilized by animators to improve skeletal animation workflow for "The Bourne Conspiracy"
- Pair Programming, Test Driven Development, Agile practices

PROJECTS

GrowthTracker (C++) 2011 – 2012

- Identifies growing memory bugs undetected by Valgrind, Purify, Insure++
- Identified memory problems in Google Chromium/Chrome browser, WebKit, Ogre3D
- Submitted fixes now integrated into Google Chrome 18.0.1025.142 and Ogre3D 1.7.4

Epocene/Holocene (Python, MySQL, AS3) 2011 – Present

- Developed innovative conversation system, precedence engine for display of users, gist system

Ray Tracing Rendering Engine (C++) 2006

- Won UCSD's annual rendering competition with procedural spherically bump-mapped golf ball in grass generated on fractal landscape, motion blurred golf club, bsp tree optimization

EDUCATION

MS Computer Science 2004 – 2007
University of California, San Diego GPA 3.5
Specialization in Computer Graphics and Vision

BA Mathematics - Computer Science 2000 – 2004
University of California, San Diego GPA 3.81
Magna Cum Laude Major GPA 3.93

TECHNICAL SKILLS

Languages: C++(use every day), Python(use often), experience in: C, Java, PHP, AS3, MEL
Tools: Visual Studio, Git, SVN, Xcode, gtest, Maya, Photoshop
Libraries: Boost, Ogre3D, Maya, FMOD, OpenCV, CGAL, OpenGL, NVAPI

*CHMPR = Center for Hybrid Multicore Productivity Research