

Daniel Karl Wilhelm

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Education:

Computation and Neural Systems
Graduate Student

California Institute of Technology, Pasadena, CA
GPA: 4.15

Bachelor of Science in Computer Engineering
Minor: Psychology

Purdue University, West Lafayette, IN
Graduation: May 2006 GPA: 3.89 (Major: 4.00)

Publications: Ryan Traylor, Daniel Wilhelm, Bernard D. Adelstein, and Hong Z. Tan,
"Design considerations for stand-alone haptic interfaces communicating via UDP protocol,"
Proceedings of the 2005 World Haptics Conference, Pisa, Italy, pp. 563-564, Mar. 18-20, 2005.

Awards/Honors:

- Dept of Homeland Security Graduate Fellowship, 2006
- Honorable Mention, National Science Foundation Graduate Fellowship in Psychology
- ECE 495D AMD Wafer Award for Design Excellence (for 3D GPU design/implementation)
- First Prize, Krannert School of Management Award for best undergrad business-related report
- Semifinalist, Undergraduate Division, Burton D. Morgan Entrepreneurial Competition

Research/Employment History:

- **Microsoft Corporation** (advisee of Dr. Robert Wang) [Sum2006]
 - o Performance-tested and optimized search engine classifier algorithm. Authored classifier algorithm management GUI tool.
- **Lawrence Livermore National Laboratory, Technical Scholar** (Dr. Steven Langer) [Sum2005]
 - o Developed a Yorick library for parallel supercomputers optimizing the reading and writing of terabyte-large scientific simulations at near-interactive speeds using Visus R&D code
- **NSF/NASA Summer Undergraduate Research Intern in Nanotechnology** [Sum2003, Sum2004]
 - o Attended nanotechnology workshops and seminars, research assistant at Purdue (below)
- **Haptic Interface Research Laboratory, Research Assistant** (Prof. Hong Tan) [Sum2003 to F2005]
 - o Researched UDP techniques for maximizing data transmission to Ethernet-based haptic devices, aided psychophysical experiments in controlling users' perception, authored carbon nanotube buckling simulation, authored marble maze tactile simulation, assembled tactor driver boards

Projects:

- **iReader** [2006]: Designed, implemented, and debugged portable eBook reader PCBs which reads text files from a USB thumbdrive, navigates FAT32 filesystems, displays graphics and text page-by-page, and automatically recharges NiCd batteries with AC adapter. Team-based senior design project.
- **3D Graphics Processing Unit** [2005]: Designed and implemented in VHDL with team, including w-buffer, hardware line rasterization, double buffering, and ~70-page design document
- **FunDynamics Business Plan** [2005]: ~50-page plan for electronic toy company "FunDynamics"
- **AI/Software Lead, Secretary, Purdue RoboCup (autonomous robot soccer)** [2002-2005]
 - o Led weekly meetings to develop code for simulations, researched and implemented high-level vision and pathfinding algorithms, designed robot software/hardware architecture
- **Independent Computer Programming Projects**
 - o Developed Internet-based "C++ Programming Through Graphics" course, gave weekly lectures
 - o Authored extensive DirectX wrappers used to teach introductory high-school C++ course
 - o Wrote two complete C-linkable assembly graphics libraries (VESA banked/linear, Mode 13h)
 - o Authored article "Advanced Panning Techniques" for popular hobbyist site GameDev.net