

MARIJN KENTIE

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Professional Experience

March 2011-Current – Software Engineer at IHC Systems

Worked on nautical charting software, ship control systems and dredger simulators at a multinational ship builder. All sorts of work on an almost 200-project codebase. Development lead on a 3D terrain model viewer for survey and dredging work, from prototype to implementation stage. Developed and maintained installers for all products. Keywords: C++, Visual Studio, Win32, MFC, MSI, Direct3D, HLSL.

2010 – Internship at the German Research Center for Artificial Intelligence (DFKI)

Three-month internship. Helped with the development and testing of a GPU accelerated ray tracer; integrated this C# project with the institute's C++-based scene graph and effects packages. Keywords: Ray tracing, OpenGL, C++/CLI.

2005-2010 – Teaching Assistant at Delft University of Technology

Helped students with and graded lab work for various courses related to programming, (digital) electronics and embedded systems. Keywords: 8051, VHDL, Java.

Formation

September 2008 – December 2010

Master of Science in Embedded Systems at Delft University of Technology

Relevant courses: Embedded Computer Architecture, Real-Time Systems, Compiler Construction, 3D Computer Graphics and Animation, Software Testing and Quality, Software Engineering.

Thesis: Biological Sequence Alignment Using Graphics Processing Units; then-fastest GPU(CUDA) implementation of Smith-Waterman based protein database search. Resulted in a published paper in BMC Research Notes 2011 vol. 4.

September 2004 – April 2008

Bachelor of Science in Electrical Engineering at Delft University of Technology

Relevant courses: Algorithms and Data Structures, Computer Graphics, Information Processing, Computer Architecture, Embedded Systems. Various digital/analog electronics courses.

Thesis: Design and implementation of a C-to-VHDL converter's call graph viewer and -editor.

Other: Member of the study association's education feedback group.

Skills

Programming languages

Most comfortable: C, C++(11), HLSL, various assembly dialects. Knowledge of Java, C++/CLI, C#, VHDL, PHP, Visual Basic 6

Platforms

Microsoft Windows, Microchip PIC microcontrollers, 8051, Z80, GPGPU

Technologies

Win32, MFC, GDI, C++ STL, OpenGL, Direct3D 10/11, networking (sockets), USB, CUDA, SSE, Windows Installer (WiX, MSI)

Web technologies

PHP 4&5, MYSQL, (X)HTML, CSS

Applications

Visual Studio 6 - 2010, Team Foundation Server 2010 and its API, Microchip MPLAB / C18, MATLAB, Latex, Subversion

Languages

Native Dutch. Fluent in written and spoken English, completed the highest level English course offered by the Delft University of Technology. Basic German and French.

Selected Projects (see kentie.net)

2011 – Personal Project: Lightweight Usenet client

Downloader for Usenet binaries, written in pure C++ on top of Win32. Networking based on a worker thread pool triggered by Winsock I/O completion ports. SSL and IPV6 support. Lock-free programming techniques to limit contention. Completely streaming file decoding, overlapped I/O.

2010 - Personal project: Replacement executable for the video game Deus Ex (2000)

Makes a decade-old game compatible with modern CPUs and operating systems; fixes graphical, input, security and timing issues. Incorporated community feedback to add support for add-ons.

2009 - Personal project: Direct3D 10 renderer for Unreal engine games

Improves graphical quality of various older video games and improves compatibility with modern systems. Utilizes current shader techniques whilst preserving the games' fixed-function behavior. Has been featured on various video game news websites and has been downloaded more than 10,000 times.

2007 – SUN keyboard to USB converter

Adapter to use a proprietary SUN Microsystems keyboard on any USB equipped system. Based on a Microchip PIC microcontroller with HID device firmware.

Interests

Motorcycling

Video games

Marathon rowing

Personal hard- and software projects