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Curriculum Vitae
26.6.2013

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Birthdate: 7.3.1980

I'm a **software engineer** who originally trained as a **computational physicist** and a **computer graphics generalist** with over **6 years** of professional experience writing native code with realtime requirements and over a decade of practice in programming.

My key talent is a fair understanding (practicing journeyman, non-guru) of the modern graphics stack and tools up from the GPU API all to the way to the end user content creation requirements and techniques encompassing engine development, data formats and practical creation of 2D and 3D art assets. My career highlights include developing industry standard graphics benchmarking applications targeting the OpenGL ES 2.0 generation of mobile devices.

Core competencies: **C**, **C++**, **OpenGL**, and computer graphics in general. I am familiar with data-rich modeling (in the construction industry but applicable in general to other domains). While not an expert I also enjoy programming in Python and F#.

Education

Master of Science (2006). Department of **Engineering Physics and Mathematics**, TKK.

History of Employment

Software Engineer, Tekla Oy, January 2011 - present. Maintenance and development of building information modeling software Tekla Structures, which incorporates millions of lines of code in C, C++, C# and odd in-house configuration languages. Gained extensive experience in developing features for and debugging a very large software system. C++, C#.

Software Engineer. Rightware Oy. December 2009 - January 2011. Continuing duties from Futuremark in a spin-off of its Embedded business unit. Main developer for the Basemark GUI benchmark system. I developed the project from a set of fairly loose requirements to a finished product with the help of a great team and high quality base technology. 'Basemark GUI free' is downloadable for Android devices from <https://play.google.com/store/apps/details?id=com.rightware.basemarkgui&hl=en>. Wrote an OpenVG scenegraph engine and a compiler that converted SVG data to the scenegraph code. C, Python.

Software Engineer. Futuremark Oy, Mobile and Embedded solutions. December 2006 - December 2009. Developing Futuremark's OpenGL ES 2.0 3D engine, toolchain and graphics benchmarks for embedded devices used widely in the semiconductor industry. Other duties included authoring three whitepapers, product specification and testing as well as build system implementation using Scons for cross-platform compilation of the graphics engine and

Jenkins as the CI service. C, C++, Python.

Research assistant. Laboratory of Physics, TKK. Pre 2007. Master's thesis on a fluid dynamics simulation of injection molding of plastics. Some webmaster work and student counseling on the side.

Trainee. Space research, Finnish Meteorological Institute (Helsinki). Summer 2003 and 2005. Developed a package for visualizing space weather induced ground currents using Matlab (2003). Data-access web-interface prototyping (2005) (JavaScript, HTML, Perl).

Trainee. Thales Microsonics, Sophia Antipolis, France. Summer 2002. Surface Acoustic Wave filter simulation and comparison with interferometric measurements of said devices. Matlab, Fortran, circuitry simulation with some input from experimental physics.

Skills

Computing: C, C++, Python, F# (and some OCaml), OpenGL, GLSL, OpenVG. A bit of Scala. MS and GCC toolchains. Computer graphics. Juggling 2D and 3D graphics data formats back and forth. Visualization. Some familiarity with numerical methods and number-crunching with Matlab and Mathematica.

Visual stuff: HTML and Javascript literate but not much practice there. Dabbled with Adobe's publishing software for ages. Blender. For large structured documents LaTeX is my dearest friend (a twisted, a bit wierd but generally trustworthy friend) if Markdown does not fit the bill. I'm also a published comics artist. ("Ilman naista" and "Ilman naista 2" albums - <http://ilmannaista.sarjakuvablogit.com/> - in Finnish).

Communications: Good spoken and written Finnish and English. Good interpersonal skills; I work well with a team. Quick to adapt to new requirements. Conceptual visualizations in a breeze.

Other

I like to doodle and hoard professional literature when not programming. While studying I worked in the board of the physics students association and learned the value of small dedicated expert teams in various projects (well, organizing fun takes a logistic and co-ordination effort) fairly early on.

My current professional goals are to increase my knowledge of algorithm and software design, solid modeling and computer graphics. Avoiding mutable state and keeping the code as simple as possible are my favorite tools to write beautiful and correct code. TDD is great but it does not replace good design.

As a person I'm pretty easy-going otherwise but extremely dedicated to high quality code craftsmanship.