

Marius Kintel

C++ 3D graphics developer

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I am a software developer with 15 years of professional experience, specializing in C++ and real-time 3D visualization in a cross-platform environment. Driven by a passion for technology and good software design, I am looking for new challenges where I can apply and develop my skills.

Professional Experience

Self employed - Vienna, Austria	2010-
Kongsberg SIM GmbH - Vienna, Austria General manager and senior software developer.	2007-2009
Kongsberg SIM AS - Oslo, Norway Software developer, technical project manager.	1996-2006
Intervention Centre - Oslo University Hospital Mandatory civil service. SW development, medical 3D visualization.	2001

Selected Projects

Makerbot Industries <i>Software consultant</i> Provided software development services for 3D printer front-end software, geometric processing and microcontroller firmware. C/C++, AVR, Java, Python. http://www.makerbot.com	2011
OpenSCAD <i>Lead Developer and Maintainer</i> OpenSCAD is a Free Software 3D modeling tool for programmers. This software is the most widely used modeling tool in the Makerbot and RepRap communities and was developed to fill the need of a Free Software tool for solid modeling, primarily targeted rapid prototyping. http://www.openscad.org	2009-present
ECAD <i>Main developer</i> R&D project developing solutions for large-scale visualization of 3D CAD databases. Prototype developed using C++, Qt4, Coin3D and OpenGL.	2006-2009
ProSource 3D Viewer <i>Technical project manager and lead developer</i> A 3D viewer plugin to Schlumberger's ProSource product. Java/Swing/JOGL/JNI for GUI, C++/Coin3D/OpenGL for rendering back-end.	2005
Sc21 <i>Lead developer</i> Design and development of Sc21: Integration of the Coin3D scene-graph library with Mac OS X and Cocoa. http://www.coin3d.org/doc/mac/Sc21/	2004
Strider <i>Researcher</i> Research project for evaluating need, state of the art and potential solutions to large-scale 3D visualization of process plants. Final report available on demand.	2003
Vispo	2002-2004

Lead developer and technical project manager

A web application for visualization of upstream 3D data in the oil and gas industry. Browser plugin written using Qt, Coin3D and ActiveX. Back-end written in J2EE. Delivery to Statoil.

Rational Reducer

1996-2000

Lead Developer

Literature study, design and implementation of polygon reduction algorithms. Design and implementation of the Rational Reducer application, a 3D polygon reduction tool for end users. C++, Qt, OpenGL.

Education

M.Sc., Computer Science

1991-1996

Norwegian University of Science and Technology (NTNU)

Master thesis: "Real-time 3D Facial Animation" - Real-time generation and animation of facial expressions by mapping emotions to virtual muscle movements. Prototype written in C++ and IRIS Performer.

Skills

During my career as a software developer, I have worked with many **different aspects** of software development; pre-sales, tenders, specifications, prototyping, design, implementation, deployment, support, maintenance as well as consulting and technical project management.

The majority of projects I have been involved in have been development of **real-time 3D visualization** applications for the oil and gas industry. My strongest technological foundation is **C++**, using **Qt** (<http://qt.nokia.com>) and **Coin3D** (<http://coin3d.org>) for GUI and 3D visualization respectively. Coin3D is a large C++ scene-graph library developed by my former employer (Kongsberg SIM), with which I am intimately familiar. I have been using Qt regularly since 1997.

Related to 3D visualization, I have a special interest in **solving difficult problems**, optimization and working with **large amounts of data**. One of the earliest projects I did was to develop algorithms for geometric optimization of arbitrary 3D models (**polygon reduction**). These algorithms were made commercially available as an SDK and a stand-alone application (Rational Reducer) which subsequently has been licensed by companies like BMW, Toyota, Volvo, Lockheed Martin, NASA, Boeing and US Army.

In addition to these technologies, I'm also experienced with **OpenGL** and Open Inventor as 3D rendering frameworks, **Objective-C/Cocoa** for building native software for **Mac OS X**, well as **Java**(J2SE), using JOGL and JNI for interfacing with native, hardware-accelerated 3D software. I have also worked with client-side **Python** and **JavaScript** (QtScript, SpiderMonkey), in both cases using Qt and Coin3D as application frameworks.

I enjoy **learning to master new technology** and I am not limited to using the technologies with which I am intimately familiar. I also do significant amounts of software development in my spare time. Over the years I have developed a strong passion for **Free and Open Source** software and **open standards**. Developing solutions which are based upon and help improving Free Software is a strong motivator.

In addition I am, as a hobbyist, familiar with and interested in **electronics**, embedded computing, physical computing, **3D printers** (I am a core member of the RepRap project; <http://www.reprap.org>), desktop manufacturing (e.g. designing for laser cutting) and robotics. I am involved in the global Hacker Space movement (<http://hackerspaces.org>) and an active member of the **Metalab** in Vienna (<http://metalab.at>).

I speak **English** fluently, **Norwegian** as a mother tongue and conversational **German**.