

Resume of

Steven Leigh

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Additional contact details available upon request

EDUCATION

Bachelor of Information Technology with Distinction / Bachelor of Mathematics with Distinction (Graduated: Mid 2008)

GPA: 6.08 (**IT:** 6.40, **Maths:** 5.76)

Skills Developed

- Object Oriented Programming
- Proficiencies in C++, PHP, Java, SQL
- Graphics pipeline understanding and implementation using OpenGL
- GPU and GPGPU programming using Cg and OpenGL
- SDLC, Requirements Specifications, Design Document, Testing Strategies
- Linear Algebra, Discrete Mathematics, Advanced Calculus (PDEs) and Mathematical Modelling
- Technical Research and Implementation

PROJECTS

Additional details, including downloads, is available at <http://stevespace.com/folio>

DirectX Hobby Project (2008, ongoing)

This is an ongoing hobby project seeking to implement a simplified single player volleyball game using a variety of current techniques for graphics and game play. It has been designed from the ground up to be a reusable engine, with extendable scene nodes, interaction/behaviours and tasks inside a memory managed kernel.

Technologies: C++, DirectX9, HLSL, Visual Studio .Net 2005

Techniques: Scene Graph, 3DS File Import, Profiling, Garbage Collection, Blinn-Phong Lighting, Normal Mapping, Anisotropic Lighting, Omnidirectional Shadow Mapping, Render-to-texture, shader debugging, Collision Detection and Response, User interaction

GPGPU Fluid Simulation (2008)

This application simulated 3D fluid flow using General Purpose GPU (GPGPU) to solve 3D versions of the Navier-Stokes equations on a discrete, finite domain, including outer boundaries. It renders the fluid as an object in a 3D world, suitable for incorporation into a scene graph, by using ray casting. Also illuminates properly with a directional light source.

Technologies: C++, OpenGL, GLUT, Cg, Visual Studio .NET 2005

Techniques: GPGPU Programming, Ray Casting, 3D Numerical Simulation, Texture Atlas, Render-to-texture, shader debugging

Fluid Visualisation (2007)

This application simulates 2D fluid flow on the CPU by solving 2D Navier-Stokes equations on a discrete and finite domain, including internal and outer boundaries. It records each time step and displays the result using the Lagrangian-Euler Advection (LEA) technique.

Technologies: C++, wxWindows, OpenGL, Visual Studio .NET 2005

Techniques: Event Handling, Dynamic Texture Generation, 2D Numerical Simulation

Shaders and AI (2006)

An implementation of a dynamically loaded scene graph including skeletal animation, per-pixel lighting, "Wander" and "Chase" AI behaviours, alpha blending and planar reflection.

Technologies: C++, OpenGL, GLUT, Cg, Visual Studio .NET 2003

Techniques: Blinn-Phong Lighting, Bump Mapping, DH Skeletal Animation, AI, Reflection

Other Projects

- "Sequence Analysis Laboratory" Java/JDBC DNA Inspection Application (2005)
- "Australian University Games" Dynamic Website (2003)

WORK EXPERIENCE

Sauce Software (Jan 2007 – Present)

1300 559 165 (Mats Tormod)

- Web development in a small business using a LAMP stack (PHP + MySQL)
- Lead Developer of a small team
- Small Project Management and Support
- Work independently in software design and development
- Heavy customisation of open-source software
- Collaborate with sales and design colleagues
- Introduced SDLC and documentation guidelines
- Developed loosely coupled, integrated components
- Linux and Windows systems administration
- Installation and upgrades of multiple versions of programs
- Build Master

Embie Web Development (Oct 2006 – Nov 2006)

0422 953 909 (Michael Harding)

- Web development in a small team using classic ASP

Dialog Pty Ltd (Jul 2005 – Jul 2006)

- Application development in a small team using Sybase PowerBuilder
- Web development in a small team using ColdFusion
- Bug fixes and support
- Security testing and patching

SKILLS

Programming Experience

- C, C++
- Cg / HLSL
- PHP
- Java
- HTML, CSS, Javascript, AJAX
- PowerBuilder
- MySQL
- MSSQL
- Cold Fusion

Tools and Technologies

- OpenGL / DirectX
- wxWidgets
- Visual Studio .NET
- Windows
- Linux

REFEREES

Name: Tim Walsh
Contact: 0414 551 072
Relation: Previous work colleague
Occupation: Senior Java Developer (Red Hat)

Name: Mike O'Loan
Contact: 0410 527 872
Relation: Previous Manager
Company: Smarte

Name: Ross Brown
Contact: 07 3138 9481
Relation: Project Supervisor
Occupation: Senior Lecturer (QUT)