

## Curriculum Vitae

# Thomas Linstead

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Full Clean UK Driving License    Date of Birth: 22/07/1992

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Portfolio: <http://www.swcdesigns.com>

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### SKILLS:

Extensive experience:    **C++, C#, Java, OpenGL, HTML, CSS and SQL.**  
Some experience using:    **PHP, Matlab, JavaScript and OpenCL.**  
Tools:    **Visual Studio, Unity/MonoDevelop, Netbeans, SourceTree.**  
Additional experience using:    **Microsoft Office, LaTeX and Unix Scripting.**

Familiarity using **Version Control** including **Git**. Good understanding of Software Engineering practices such as **Object Orientated Programming** and **Design Patterns**.

I enjoy problem solving and actively want to further my knowledge and learn new skills. During the course of my degree I have gained experience of working on several large projects, both as an individual and as part of a team from which I have demonstrated good leadership and teamwork skills. I have a good background in mathematics from modules undertaken during my degree including vector mathematics and equations. I have excellent organisational skills and timeliness.

### EDUCATION:

#### **University of East Anglia UEA, 2010 – 2014:**

**Degree of Master of Computing with First Class Honours in Computer Graphics.**

#### ❖ Modules included-

##### **Software Engineering:**

Data Structures and Algorithms **70%**, Software Engineering I **81%**,  
Software Engineering II **78%**, Advanced Programming Concepts and Techniques **78%**.

##### **Computer Graphics:**

Graphics I **85%**, Graphics II **75%**, Advanced Graphics **79%**, Computer Games Laboratory **89%**

##### **Mathematics:**

Mathematics for Computing **88%**, Computing Fundamentals **91%**, Theoretical Computing **65%**.

##### **Other:**

Sound and Image I **70%**, Computer Networks **77%**, Architectures and Operating Systems **85%**.

#### ❖ Significant Projects-

3<sup>rd</sup> Year Dissertation Project: **Real-Time Ray Tracing** **76%**

Final Year Dissertation Project: **Haptic Software for Molecular Docking** **78%**.

#### **Kett Sixth Form, 2008 – 2010:**

**A Levels in:**

**Computing (Grade A)**

**Product Design (Grade A)**

**Physics (Grade D)**

**Chemistry (Grade D)**

#### **Sprowston High School, 2008:**

**12 GCSEs at grade B or above (including Maths & English).**

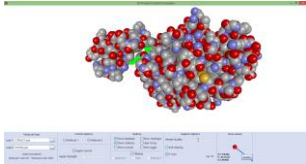
## **PROJECTS:**

Full portfolio: <http://www.swcdesigns.com>



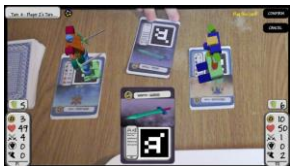
### **Real-Time Ray Tracing – Individual 3<sup>rd</sup> Year Dissertation Project**

Personal dissertation implementing the Ray Tracing technique in a new way utilising multiple cores of the CPU and GPU to perform parallel computation to achieve real-time performance. This project used OpenCL to attempt cross platform performance, whereas most other implementations use CUDA which is limited to NVidia hardware. Programmed using C++, OpenCL and OpenGL.



### **Haptic Molecular Docking – Final Year Dissertation Project**

I developed a piece of software as part of a team to simulate molecular docking of molecules. I programmed the challenging task of rendering many atoms on screen at the same time, as well as handling the collisions and force calculations. In addition I coded the interface with a new 3D pen haptic hardware device. The project involved C# development interfacing with custom native C++ DLLs, creating a larger piece of software through modular design and team collaboration utilising Git source control to develop the application.



### **Mech Duel AR Game – Computer Games Lab Masters Module**

Mech Duel is an augmented-reality (AR) card game created as a project for the Computer Games Lab module. It utilises custom designed playing cards with markers that can be detected with a webcam. I had the role of Lead Programmer, programming the main gameplay application using C++ and OpenGL, utilising the ARToolkit library, with other team members providing the 3D Modelling and AI. I captured custom motion capture data for animations and OpenAL was utilised for sound. This project involved working as a team to produce a game with many different elements and utilising several external libraries.



### **2D CAD Software – Advanced Programming Techniques Module.**

A bespoke piece of software was created for 2D computer aided design (CAD) specifically for architectural drawing in C# using OpenTK. The objective was to produce a system that is extensible and well-designed which meets the client's needs. A software product was produced as part of a team consisting of three individuals utilising agile development methods. The software was produced to meet the requirements of a client, extensively tested to ensure these requirements were met and documented thoroughly. Design patterns were utilised in the design, including Singleton and Bridge patterns.

## **EXPERIENCE:**

### **Work experience at Anglia Design LLP on two occasions**

On the first occasion I had a chance to develop my CAD skills as well as meeting several clients in a working environment. On the second occasion I worked alongside the employees of Anglia Design LLP to develop a website for the company.

## **HOBBIES/INTERESTS:**

I have a passion for technology and own many technical gadgets. I also enjoy computer gaming to relax in my spare time. I spend a lot of my spare time creating and programming personal projects in a wide range of computer activities. I enjoy participating in programming competitions such as GameJams and have taken part in the Brains Eden 2014 and Norwich Gaming Festival competitions. I see myself as a film enthusiast from which I joined the anime society at university. I occasionally play badminton and go cycling with friends.

## **Referees:**

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