Jacques KAISER

Resumé

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*Graduated Computer Scientist, under a **Working Holiday Visa**, applying for a developper position*

Education

2012–2013 **MSc. Computer Graphics with Honors**, *Strasbourg University*, France.
Computer science and science of images.

2009–2012 **BSc. Computer Science with Honors**, *Strasbourg University*, France.
Third year abroad in **Durham University**, England.

Experiences

Vocational

June–Oct. 2013 **JavaScript/WebGL Developer**, *Skimlab*, Strasbourg.

Skimlab is a brand new startup. The business model is to provide an easy online tool for modeling 3D objects which relies on implicit surface. It is possible to purchase designed objects, a 3D printed instance will be shipped. The startup also created Skimring, an equivalent to Skimlab for designing and purchasing jewelry. I worked on WebGL shader development to enhance and speed up rendering. It involved good knowledge of JavaScript, Three.js, glsl and WebGL.
Detailed achievements:

- Environment mapping;
- Set of shaders that emulate the materials we print;
- **WebGL Raytracer**, supporting:
  - Spheres, Cones and Cylinders (a);
  - **Implicit surfaces** (b);
- Optimized the Raytracer with:
  - Object culling (a);
  - Space partitionnement (b);
  - Bounding volumes (c);

I am still working on the implicit surface raytracer, you can browse *www.skimlab.com/raytracing* to see the work in progress.

2012 **Individual tutor**, *Complétude*, Strasbourg.

Individual tutoring of mathematics for scientific high school students. I've been tutoring two students during one year, teaching them for around 3h a week each.

June–Aug. 2012 **Research intern/C++**, *iCube*, Strasbourg.

Development of an application for mesh deformation on a virtual reality platform. In order to be realtime, it has been built upon **CGoGN**, a powerful library that provides an efficient implementation of combinatorial maps, maintained by the iCube laboratory. The application worked through a **3D cursor**, the avatar of the user.
Detailed achievements:

- Selection of objects of different natures:
  - Vertices;
  - Edges;
  - Faces;
  - Volumes;
- Moving selected objects;
- Moving a set of geometrically close objects (neighbors in space);
- Moving a set of topologically close objects (neighbors on the mesh);

Developping on a virtual reality platform also added constraints such as screens synchronisation and non-stantard input methods.

June–Aug. 2011 **Research intern/C++**, *iCube*, Strasbourg.

Customizing interactive 3D cursors in order to solve positioning issue in virtual environments, which has been used in the mesh deformation app. The positioning issue refers to the fact that, desptite the improvments of 3D technologies, it remains hard to guess relative depth of objects in space. I implemented solutions where the cursor gives hints on its position by scaling and orienting itself toward the closest object in space. We tryed out many different shapes and updating methods.

Personal projects

July–Now 2013 **Created my own website**, *www.jacqueskaiser.com*.

Personal website that hosts few personal projects and more in depth description of myself. I relied on common startup technologies, such as node.js, heroku and twitter bootstrap.

June–Sept. 2013 **Startup Engineering class**, *Coursera*.

This class teaches the basics of creating and scaling a startup. The final exam is about releasing a bitcoin based crowd founder for an app. I decided that a **leap motion** app would be appropriate as I received mine quite recently. The crowd founder is live at **www.handy-sketch.tk**, even though I haven't started coding the app yet.

May–June 2013 **Web Development**, *Udacity*.

This class helped me to understand how the web works. It teaches HTTP and how to handle it with Google App Engine.

Jan.–March 2012 **Introduction to Parallel Programming**, *Udacity*.

This class is about the fundamentals of parallel computing with the GPU and the CUDA programming environment. It teaches the GPU programming model and architecture, key algorithms and parallel programming patterns, and optimization techniques.

Miscellaneous

2011 **Finalist on a coding contest**, *Prologin*, Paris.

French national Computer Science contest, where contestants have two days to develop an artificial intelligence for a made up game. The AIs then fight against each other, and the score of one's AI determines its rank in the contest.

2009 **Animation Capacity Diploma**, *BAFA*, France.

This French diploma allows you to work as a facilitator and watch after kids and teenagers. I worked in two different activity centers, for a total time of one month.

Languages

French	**Mother tongue**	*Born in Strasbourg*
English	**Fluent**	*Lived one year in Durham, England*

Computer skills

Startup	JavaScript, CoffeeScript, Python	**Web**	Node.js, Heroku, GoogleApps
Programming	C, C++, Assembly	**GPU**	OpenGL, WebGL, glsl, Cuda
Environment	Unix, Bash, Emacs	**VCS**	Git, Mercurial, Subversion
Softwares	Blender, Unity, Gimp		

Interests

Juggling	Up to four balls	**Tricking**	Teached me to exceed my limits
Ukulele	Easy access to the music world	**Slacklining**	Enhanced my balance and focus
Ultimate	Good for team play	**Dancing**	Improved leading skills
Woofing	Lived one month in Scotland		

References

Maxime Quiblier, *max@skimlab.com*.
Trainee's supervisor, CEO at Skimlab.

Jérôme Grosjean, *grosjean@unistra.fr*.
Trainee's supervisor, lecturer and researcher at the iCube laborary.

Basile Sauvage, *sauvage@unistra.fr*.
Lecturer and researcher at the iCube laborary.

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Company Recruitment team
Company, Inc.
123 somestreet
some city

January 01, 1984

Dear Sir or Madam,

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Albert Einstein discovered that $e = mc^2$ in 1905.

$$e = \lim_{n \to \infty} \left(1 + \frac{1}{n}\right)^n$$

Yours faithfully,

Jacques KAISER

Attached: curriculum vitæ