

# Jacques KAISER

## Resumé

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*Graduated Computer Scientist, under a **Working Holiday Visa**, applying for a **Front-End Developer** 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. **JavaScript/WebGL Developer**, *Skimlab*, Strasbourg.
- 2013 Skimlab is a brand new startup. The business model is to provide an easy online tool for modeling 3D printable objects. My work there enhanced the application while keeping the **user interface** simple, which is a common pitfall in modeling softwares. It involved deep understanding of **JavaScript** and the graphic pipeline.  
Amongst added features:
- Set of shaders that emulate the materials we can print;
  - Environment mapping;
  - Point cloud render mode;
  - Raytracer render mode;
  - High quality image rendering;
- In order to keep the application real-time in spite of the expensive computations required to compute an object's surface, I also developed a simple framework to handle **HTML5 Web Workers**.  
You can try the application on [www.skimlab.com](http://www.skimlab.com).
- 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. **Research intern/C++**, *iCube*, Strasbourg.
- 2012 Development of an application for mesh deformation on a virtual reality platform. In order to be real-time, it has been built upon **CGoGN**, a powerful library maintained by the iCube laboratory, which I had to become familiar with. The application worked through a **3D cursor**, the avatar of the user.  
The conventional input device for such an environment is a wand, whereas many users are accustomed to a mouse. Therefore, it has been challenging to design an intuitive user interface to wrap some complicated features you usually find in a mesh deformation application.

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

2011 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, despite the improvements 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 tried out many different shapes and updating methods, and we performed **statistical tests** to provide a formal proof of the improvement over standard cursors.

### Personal projects

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

2013 Personal website that hosts few of my projects, and a more in depth description of myself. I relied on common startup technologies, such as node.js, heroku and **twitter bootstrap**. As a work in progress, it is updated regularly.

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

2013 This class taught me the basics of creating and scaling a startup, along with the market research, and get me familiar with **industry best practices**.

As I was working at Skimlab in the meantime, I had the opportunity to instantaneously put into practice what I was learning.

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

2013 This class helped me to understand how the web works under the hood, down to basic HTTP requests.

Even when relying on high level abstraction offered by technologies such as google app engine, it may reveal significant to understand the big picture in order to track down bugs.

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

2012 This class was about the fundamentals of parallel computing with the GPU and the CUDA programming environment.

It taught me how to use the GPU chip for general computations along with common parallel algorithms. Since, I'm able to identify whether an algorithm could have a huge performance gain by being redesigned and shipped to the GPU.

### Special achievements

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. Contestants are then ranked with respect to the score of their program when they fight against other contestant's ones.

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

This French diploma allows 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. Managing up to 14 kids by myself improved my authority.

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## Languages

**French** Mother tongue

*Born in Strasbourg*

**English** Fluent

*Lived one year in Durham, England*

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## Computer skills

**Startup** JavaScript, CoffeeScript, Python

**Web** Node.js, JQuery, Angular.js

**Programming** C, C++, Assembly

**GPU** OpenGL, WebGL, glsl, Cuda

**Environment** Unix, Bash, Emacs  
**Softwares** Blender, Unity, Gimp

**VCS** Git, Mercurial, Subversion

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## Interests

**Juggling** Up to four balls

**Ukulele** Easy access to the music world

**Ultimate** Good for team play

**Woofing** Lived one month in Scotland

**Tricking** Teached me to exceed my limits

**Slacklining** Enhanced my balance and focus

**Dancing** Improved leading skills

**Rollerskating** Involved in a community

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## 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 laboratory.

**Basile Sauvage**, *sauvage@unistra.fr*.

Lecturer and researcher at the iCube laboratory.