

# Résumé : Lilian Besson

## Other language(s)

This page is in *english*. Maybe you would like to see it in *french*. I'm trying to keep those two files absolutely equivalent. A **PDF** version is also available [CV\\_Lilian\\_BESSON.en.pdf](#)

## Contact address

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- **Address** (postal)

Mr Lilian Besson,  
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94230 - Cachan,  
France

## Application

- **From 1 February 2014 to 31 August 2014:** Second year MSc research internship. In *Computer Science* or *Mathematics*;
- **Preferred locations:** USA, UK, Canada, Sweden, Norway, Finland, Denmark;
- **Preferred research domains:** programming, differential equations, tropical algebras, time processes, parallel computation, GPU, cryptography, semantics, compilation.
- **Remark:** no subvention is required.

## Extra informations about me

- **Date of Birth:** January 12 1993. Age : **20**.
  - **Current Status:** Student at [ÉNS de Cachan](#), in second year. Studying **mathematics** and **Computer Science**.
  - **Webpages:**
    1. my personal web pages :
      - either on the *Cr@ns website* : [perso.crans.org/besson](http://perso.crans.org/besson);
      - or on the *ÉNS de Cachan CS department* : [www.dptinfo.ens-cachan.fr/~lbesson](http://www.dptinfo.ens-cachan.fr/~lbesson);
    2. my *bitbucket* account [lbesson](#), which hosts my programming project;
    3. my *Google Site* website <https://sites.google.com/site/naereencorp>.
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## Spoken Languages

- **French:** **native**;
- **English:** **fluent**, speaking and writing, usual and scientific. **TOEIC** got in April 2012, with the mark :900/990;;
- **Spanish:** **beginner**, speaking and writing, usual only;

## Programming Languages

- **Basic:** **HTML**, Assembly (*Intel x86, MIPS, TI-83+*), **XML**, **Caml Light**;
- **Intermediate:** **Maple**, **BASIC**, **Matlab** & **GNU/Octave** and **C** (*sequential computation*), **nVidia CUDA** (*parallel computation on GPU*);
- **Advanced:** **Python** (2.7) (*object oriented and scripting*), *Texas Instrument-BASICs* (*embedded languages for graphical calculator*), **GNU Bash** (*scripting*), **OCaml** (3.12) (*functional language*), **LaTeX** & **reStructuredText** (*for slides, web pages and articles*).

## Computer skills

- **Text processing:** **LyX**, **LaTeX** & **LaTeX Beamer**, Open Office & Libre Office, Microsoft Word, **Markdown** & **reStructuredText**;
- **Text editors:** **gEdit** (Ubuntu, Windows), Notepad++ (Windows), Jota Text Editor (Android);
- **Documentation generators:** **OCamlDoc** for OCaml, **PyDOC** & **Sphinx** for Python;
- **Operating Systems:** **Microsoft Windows** (Xp, Vista, 7), Mac OS X, Android (2.2), **GNU/Linux** (with *Ångström*, *Ubuntu* (11.10), *Debian* and *OpenWRT*);
- **Net administration on Linux:** experience with net hardware and software, and net monitoring with **GNU/Linux**.

## Miscellaneous

- **Personal skills:**
    - good theoretical and practical background in maths, computer science, physics and chemistry;
    - problem-solving and communication skills;
    - good understanding and use of the actual web and generic technologies;
    - eager to learn and develop new skills;
    - passionate of new technologies;
  - **International experience:** some trips in Spain, Germany, Sweden, Italy, UK, Ireland, USA, Canada, Switzerland **since 2004**;
  - **Entertainment:** painting, role playing game, theater, video games, cinema, programmation, fantasy literature and poetry;
  - **Sports:** climbing, trek, mountain bike, swimming.
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# Academic Education

## Currently (2012-2013): First-year MSc (*Master*)

- **Mathematics MSc** (*Since Sept. 2012*)

- **University(ies):** ÉNS de Cachan & Paris Diderot University (Paris VII);
- **Domain(s):** Complex analysis, probability and martingales, functional analysis and numerical optimization, *Partial Differential Equations* approximation.

- **Computer Science MSc** (*Since Sept. 2012*)

- **University(ies):** ÉNS de Cachan & Paris Diderot University (Paris VII);
- **Domain(s):** Functional programming and typing, cryptographic protocols, compilation, Markov chains and random algorithms, net programming, machine learning.

## 2011-2012 : Third-year BSc (Bachelor, *licence* in French)

- **Mathematics BSc** (*September 2011 to July 2012*)

- **University(ies):** ÉNS de Cachan & Paris Diderot University (Paris VII);
- **Domain(s):** Functional analysis, integration, algebras, arithmetic, partial and ordinary differential equations, topology, differential geometry;
- **Mark:** 15.2/20, *magna cum laude*.

- **Computer Science BSc** (*September 2011 to July 2012*)

- **University(ies):** ÉNS de Cachan & Paris Diderot University (Paris VII);
- **Domain(s):** Logic, semantics, cryptography, algorithmic, graph theory, lambda calculus, compilation, parallel computation, formal calculus;
- **Mark:** 14.7/20, *magna cum laude*.

- **TOEIC** (*english test*) got with the mark **900/990**.

## ***BSc internship and thesis***

- **Title:** Finite volumes method on nVidia: graphic cards, applied to solve the *compressible Euler* problem;
- **Supervisor:** Pr. Florian de Vuyst;
- **Description:** Math internship at [CMLA](#) (*Centre des mathématiques et de leurs applications*, ÉNS de Cachan math lab research), 5 months (February 2012 to July 2012).
- **Abstract:** General study of numerical solvers for differential equations and partial differential equations. Linear solver, first and second order, 1 2 and 3 D, with the *VFFC* method. Numerical simulation, sequential using :C: and [VTK](#), and parallel using [nVidia CUDA](#). Interactive 2D simulation with :openGL:.
- **Published:** On my web page, the [bachelor thesis](#), in [French](#). Also published on the **IPOL journal** ([Image Processing on Line](#)), August 2012.

## 2010-2011 : Second-year BSc & *Classe Préparatoire*

- *Classe Préparatoire*, second year (**MP\***)

- **University(ies):** [Lycée Thiers](#) (Marseille, France) & Aix-Marseille 1 University;
- **Studying:** maths, chemistry, physics, engineering, computer science, philosophy, literature, English and Spanish;
- **Mark:** 17.9/20;
- **Rank:** 1/33.

### 'Grandes Écoles' entrance exams

1. Accepted and **matriculed** at *École Normale Supérieure de Cachan* (July 2011)

- **Rank:** 99/1200;
- **Matriculated:** at the maths department, student with the special French status *élève-normalien*.

2. Accepted at [École Polytechnique](#) (July 2011)

- **Rank:** 81/1900;

- Acceptance refused.

3. Accepted at *École Centrale* (Paris, Lyon, Marseille), Supélec, Supoptique (July 2011)

- **Rank:** 6/2700;

- Acceptance refused.

4. Accepted at *École Télécom Sud-Paris* (July 2011)

- **Rank:** 2/890;

- Acceptance refused.

## 2009-2010 : First-year BSc & *Classe Préparatoire*

- *Classe Préparatoire*, first year (**MPSI**)

- **University(ies):** [Lycée Thiers](#) (Marseille, France) & Aix-Marseille 1 University;
- **Studying:** maths, chemistry, physics, engineering, computer science, philosophy, literature, English and Spanish;
- **Mark:** 17.3/20;
- **Rank:** 1/46.

### 'Grandes Écoles' entrance exams

- Accepted at *École des Mines* (at Alès) (July 2011)

- **Rank:** 14/4000;

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**Mark:** 18.2/20;

- Acceptance refused.

## Other diplomas

- **Driving license**, got in Briançon (*February 2012*).
  - **High-school certificate** (French *Baccalaureat*) (*June 2009*)
    - **University:** Lycée d'Altitude (*Briançon*);
    - **Mark:** 15.7/20, *magna cum laude*;
    - **Options:** Scientific high-school certificate with specialization in **mathematics**, and intensive **theater**.
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## Other research experience

### *MSc programming projects (2012-2013)*

- **MPRI Bomberman** : a multiplayer Bomberman game with formal semantics and a open protocole (MPRI lecture 1-21.). On-line [here on BitBucket lbesson/mpri-bomberman](#), or on this web site [publis/Bomberman](#).
- **ANSI Colors** : a Python 2 script and module to use colours in a terminal. Available for download on [PyPi](#) (about 650 download by now). Or also [here on BitBucket lbesson/ansi-colors](#), or on this web site [publis/ansi-colors/](#).

### *BSc programming projects (2011-2012)*

- A small **Tetravex** game (with an automatic puzzle resolution), in **OCaml**, involving graphical programming and precise algorithmic work (second semester project);
- **mocaml**: an enhanced toplevel and an experimental IDE for **OCaml**, written in **Bash** and **OCaml** (for Windows and **GNU/Linux**). This project is dead now;
- **C--**: compiler from a subset of C to x86 assembler, with formal semantics, written in **OCaml** (first semester project);
- For **Android** apps :
  1. Syntactical coloration and collaboration for [Jota Text Editor](#) (about 4 millions downloads !);
  2. Collaboration with **Romain Vernoux** for his [OCaml Toplevel on Android](#) app, a non-official project for the **OCaml** language, approved by the French institute in charge of the project (*INRIA*).

### *Second-year BSc research project (2010-2011)*

- **Title:** *Tropical algebras & linear systems applied to mobility problems*;
- **Supervisors:** **Agnès Borel** (*Lycée Thiers*) & Pr. **Glenn Merlet** (*Aix-Marseille I University*);
- **Abstract:** general study of tropical algebras, time processes (Petri nets and Markov chains). Dijkstra algorithm, tropical and time dependant implemented with [Maple 12](#).

### *First-year BSc research project (2009-2010)*

- **Title:** *The Chess board, a dynamic surface*;

- **Supervisors:** Dr. **Yassine Dakhli** (*Lycée Thiers*);
  - **Abstract:** implementation of a two players chess game, and of a simple AI (quite inefficient, naive and slow, but functional). About **7000 lines of TI-Basic code**, one of the biggest project for *TI-82* calculator (*an old one* : 6 MHz, 28 Ko of RAM !).
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### **Note**

Sphinx and reStructuredText

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### **Warning**

Javascript and Google Analytics ®

I'm using `Javascript`, and some Django *templating* to integrate **Google Analytics** on those pages. To disable those tools, you just need to disable Javascript, probably with the preferences menu of your browser.