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 absolutly equivalent.
> A **PDF** version is also available CV_Lilian_BESSON.en.pdf

Contact address

- **First name:** **Besson**
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- **Address** (postal)

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Mr Lilian Besson,
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Application

- **From 1 Frebruary 2014 to 31 August 2014:** Second year MSc research internship. In *Computer Science* or *Mathematics*;
- **Prefered locations:** USA, UK, Canada, Sweden, Norway, Finland, Danmark;
- **Prefered 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;
   - or on the *ÉNS de Cachan CS department* : 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.

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

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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 litterature and poetry;
- **Sports:** climbing, trek, mountain bike, swimming.

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, maching 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. Liner 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, litterature, 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, litterature, 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**;
- **Mark:** **18.2/20**;
- Acceptance refused.

Other diplomas

- **Driving license**, got in Briançon (*February 2012*).
- **High-scool certificate** (French *Baccalaureat*) (*June 2009*)

- **University:** Lycée d'Altitude (*Briançon*);
- **Mark:** **15.7/20**, *magna cum laude*;
- **Options:** **Scientific** high-scool certificate with specialization in **mathematics**, and intensive **theater**.

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, or on thise 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, or on thise 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: assembly, with formal semantics, written in **OCaml** (first semester project);
- For **Android** apps :
  1. Syntaxical 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). Dikjstra 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 !*).
