

# Guillaume Basse

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## Education & Credentials

- **Harvard University** Cambridge, MA  
*PhD student* Sep. 2013 - Present
- **Harvard University** Cambridge, MA  
*Master Candidate* Sep. 2011 - Dec 2012
  - Degree: Master of Arts in Statistics (expected date of graduation: May 2013)
- **Ecole Centrale Paris** Châtenay-Malabry  
*Master Candidate* Sep. 2008 - June 2010
  - Degree: Master of Science (expected date of graduation: December 2013)
  - Degree: Bachelor of Science (June 2009)
  - Description: One of France's most prestigious "Grandes Ecoles" (Master's level engineering school)
- **Classes Préparatoires**  
*Completed* Sep. 2006 - 2008
  - Description: Intensive lessons in mathematics and sciences in preparation for the competitive entrance exams to the french "Grandes Ecoles".
- **Baccalauréat**  
*Completed* July. 2006
  - Description: National High School degree, obtained with "mention très bien et félicitations du jury" (highest distinction) .

## Research Experience

- **Distributed Grading**  
*Harvard University* Aug 2013 - Present
  - Worked out a formalism and potential solutions for large-scale peer-grading.
- **Nucleosome Positioning**  
*Harvard University* March. 2013 - Present
  - Supervisor: Alex Blocker, Prof. Airoidi
  - Ran simulations on Harvard's cluster and currently extending implementation to allow runs on larger datasets
- **Bayesian models for PTM quantitation**  
*Harvard University* Aug. 2012 - March 2013
  - Supervisor: Prof. Airoidi
  - Designed and implemented a Bayesian model for the quantitation of PTM (post translational modifications)
- **Approximating Lognormal Convolutions**  
*Harvard University* June 2012 - present

- Supervisor: Prof. Airoidi
- Developed a novel method for approximating lognormal convolutions for use in sampling mechanisms
- **Analysis of the cultural aspect of cultural trends** *April 2012 - Sep 2012*
  - *Harvard University*
  - Supervisor: Jean-Baptiste Michel
  - Designed and ran algorithms to cluster cultural trends on large datasets (multiple gigabytes)
- **DNA Processing** *July 2010 - Jan. 2011*
  - *Weizmann Institute of Science*
  - Supervisor: Prof. Ehud Shapiro
  - Designed algorithm for efficient identification and extraction of shared fragments in DNA Libraries
- **Parametric Model-Checking for Genetic Regulatory Networks** *Jan. 2010 - June 2010*
  - *Applied Mathematics and Systems Department (MAS), ECP*
  - Supervisor: Prof. Aiguier and Prof. Le Gall
  - Converted Genetic Regulatory Networks to Parametric Transition Systems using Linear Temporal Logic (LTL) and Büchi Automata.
- **Agent-based Simulator of Order Book Dynamics** *Châtenay-Malabry  
Sep. 2009 - June 2010*
  - *Applied Mathematics and Systems Department (MAS), ECP*
  - Supervisor: Prof. Muni-Toke
  - Designed algorithms reproducing the behaviour of Hedge Funds on financial markets
  - Implemented the algorithms on the department's existing simulator
  - Analysed the impact of different sets of parameters on the Hedge Fund's behavior

## Publications

- Approximating the convolution of lognormal random variables within an MCMC sampler.  
*G. W Basse, E. J Solis and E.M Airoidi,  
Draft 2013*
- Quantification of homologous proteins by mass-spectrometry.  
*N. Slavov, D. Malioutov, B. A Budnik, G. W Basse, E. M Airoidi and A van Oudenaarden,  
Draft 2013*
- A genome-wide analysis of chromatine remodeling after phosphate starvation (working title).  
*A. Blocker, X. Zhang, G. W Basse, E. O'Shea and E. M Airoidi,  
Draft 2013*

## Professional Experience

- **Harvard University** *Cambridge, MA  
May 2012 - present*
  - *Research Assistant (Airoidi Lab)*
- **Harvard University** *Cambridge, MA  
Jan 2012 - May 2012*
  - *Teaching Fellow*
- **Saint-Gobain** *Paris, France  
Jan 2011 - July 2011*
  - *Internal Audit Department - Intern*

- **Weizmann Institute of Science** Rehovot, Israel  
*Department of Applied Mathematics and Computer Science - Intern* *July. 2010 - Jan 2011*
- **Remy Cointreau USA** New-York, NY  
*Corporate Marketing - Intern* *June. 2009 - Aug. 2009*
- **Tutor** Paris  
*Mathematics and sciences - Tutor* *Sept. 2008 - July 2010*
- **Mitsubishi Motors Senegal** Dakar  
*Mechanics in a team of five people* *July. 2007*

## Computer / Language Skills

- **Language**
  - French: Fluent
  - English: writing and speaking proficiency (TOEFL: 116)
  - Spanish: Listening proficiency
- **Programming**
  - Languages: Python, R, Haskell, Common Lisp, C/C++.

## Awards & Fellowships

- Jean Gaillard Fellowship (\$35000)