

# Pierpaolo Giorgio Necchi

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## EDUCATION

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- SEP. 2014 | **Politecnico di Milano, Milan, Italy**  
JULY 2016 | *MS in Mathematical Engineering, Major Quantitative Finance* – GPA: 4.00 / 4.00
- Coursework: quantitative and computational finance, parallel computing, stochastic optimal control.
- SEP. 2012 | **Ecole Centrale Paris, Paris, France**  
JULY 2016 | *MS in General Engineering (Double Degree Program)* – GPA: 4.17 / 4.33
- Coursework: advanced statistics, signal processing, computer vision, computer science.
  - Awarded by the French “Académie des Sciences” as the first student in my class (“Major de promotion”).
- SEP. 2013 | **Université Paris Dauphine, Paris, France**  
JUNE 2014 | *First year of MS in Applied Mathematics, Major Quantitative Finance* – final grade: “mention très bien”.
- Coursework: stochastic calculus, modern portfolio theory, time series analysis, Poisson processes.
- SEP. 2010 | **Politecnico di Milano, Milan, Italy**  
SEP. 2014 | *BS in Mathematical Engineering* – final grade: 110/110 cum laude.

## WORK EXPERIENCE

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- JUNE 2014 | **BNP Paribas GECD, Paris, France**  
DEC. 2014 | *Quantitative analyst intern in the Equity Derivatives team*
- Worked on various research projects under the supervision of a senior member of the team.
  - Developed an efficient mixed Monte Carlo/PDE numerical method to price equities/rates hybrid derivatives.
  - Proposed a mixed Longstaff-Schwartz/PDE numerical method to value American-style derivatives.
  - Assessed the efficiency of surrogate-based methods for global optimization of black-box functions.
  - Implemented these methods in BNP production library and optimized the code to enhance its performances.

## ACADEMIC PROJECTS

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- AUG. 2015 | **Independent Study of Machine Learning**  
OCT. 2015 |
- Conducted an independent study of some standard ML techniques and implemented them in Python and R.
  - Completed the MOOCs “Machine Learning” and “Mining Massive Datasets” taught by Stanford University.
- DEC. 2014 | **Parallel implementation of a collaborative filtering recommender system**  
FEB. 2015 |
- Developed an efficient recommender system in C++ and parallelized the algorithm using OpenMP and MPI.
  - Exploited sparse matrices to achieve a 75% reduction of running time and excellent algorithm scalability.
- SEP. 2013 | **Mathematical modeling of residential burglary** – *Undergraduate thesis*  
JUNE 2014 |
- Studied the main criminological theories and mathematical models of residential burglary.
  - Developed a new algorithm to generate a random graph with topological features similar to those of a city.
  - Proposed an original agent-based model describing burglars-police interactions and implemented it in Matlab.

## LANGUAGES AND COMPUTER SKILLS

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LANGUAGES | Italian: native; English: fluent; French: fluent;

COMPUTER SKILLS |

- C++, Python, Matlab: advanced;
- R, C, ADA, OpenMP, MPI, Linux: basic;

## EXTRACURRICULAR ACTIVITIES AND INTERESTS

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- SEP. 2012 | **Centrale Paris International – international student society**  
SEP. 2013 |
- Organized events to foster the integration between international and French students. Welcomed 160 students during the 2013 orientation week. Helped some international students to overcome academic difficulties.
- JUNE 2009 | **Seamen Milano – American football team**  
OCT. 2011 |
- Won the U18 and the U21 Italian championships.
  - Cooperated with teammates to reach common goals and improved my leadership skills.
- AUG. 2008 | **Exchange program in Toledo, Ohio, USA**  
FEB. 2009 |
- Adapted fast to the culturally diverse environment and developed a strong open-mindedness.
- SPORTS | Football, Running (completed the 2014 Paris half-marathon in 1:44), Beach Volley, Snowboard.
- INTERESTS | Chess, board games, discovering different cultures.