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# Virgile Galle

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<https://vgalle.github.io/>

## Education

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### Massachusetts Institute of Technology (MIT)

Ph.D. from the Operations Research Center (ORC); GPA: 5.0/5.0

Relevant Courses: Linear, Robust, and Integer Programming, Network Models and Machine Learning

**Feb. 2018**  
Cambridge, MA

### École Centrale Paris

Master of Science in Applied Mathematics; received in Dec. 2015; GPA: 4.0/4.0 (top 4 of 512)

Relevant Courses: Advanced Statistics, General Optimization and Stochastic Processes

**June 2013**  
Paris, France

### Lycée Louis-Le-Grand

Preparation in Math and Physics for the highly competitive national entrance exams of French Grandes Écoles

**June 2011**  
Paris, France

## Professional and Research Experiences

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### BP America, Trading & Shipping (T&S)

*Quantitative Analyst*

**Feb. 2018 – present**  
Houston, TX & New York, NY

- Improving valuation capabilities for LNG Portfolio Optimization model and performance by 20 times speedup (Python dev)
- Developing stochastic combinatorial optimization models for power valuation problems (Tolling and Revenue Put)
- Creating new data-driven calibration model for all cross-commodity deals for Trading and Shipping
- Lead researcher on Quantum Computing Proof-of-Concept for integer optimization algorithms such as QA and QAOA

### MIT, Operations Research Center

*Research Assistant*

**Sept. 2013 – Feb. 2018**  
Cambridge, MA

- Working on increasing efficiency in port operations in a research team including MIT Chancellor and ORC co-director
- Proposed efficient and novel solutions to solve the Container Relocation and the Yard Crane Scheduling Problems using techniques such as mathematical programming, dynamic programming and stochastic optimization
- Submitted 3 papers to top peer-review journals in OR; Presented at INFORMS 2014/2015/2017 and TSL 2017

### Schlumberger Doll Research Center

*Research Intern*

**May 2016 – Aug. 2016**  
Cambridge, MA

- Pointed out the potential improvement of long term rigs scheduling and fleet sizing
- Modeled mathematically the problem and solved it using IP and tuned evolutionary algorithms. In the test cases, the solution incorporated new constraints, halved the cases of customer dissatisfaction and increased up to 5% the field production value
- Implemented a fully documented package in Julia, ready to be linked with the existing software

### Amazon.com

*Operations Research Intern*

**June 2015 – Aug. 2015**  
Seattle, WA

- Modeled a large scale supply-chain problem: The Inbound Network of Amazon.com
- Applied classical OR techniques (e.g. column generation) to solve efficiently the IP formulation
- Performed experiments on forecast and historical data and found a potential gain of 17% in cost and in VLT

### MIT, in coordination with Tampa Bay Rays and Boston Celtics

*Consultant*

**June 2014 – Feb. 2015**  
Cambridge, MA

- Designed a scout scheduling algorithm for the Tampa Bay Rays baseball team to improve minor league scouting
- Built a lineup optimization tool for the Boston Celtics basketball team providing real-time substitution recommendations

### École Centrale Paris, Laboratory of Mathematics in Interaction with Computer Science

*Assistant Researcher*

**Sept. 2012 – Feb. 2013**  
Paris, France

- Created new uniformity tests on the unit sphere and applied those to astro-physical phenomena
- Presented a report including several efficient approaches based on Wilcoxon and Kolmogorov-Smirnov tests

## Skills

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### Programming

Matlab (expert), Julia (expert), Python (proficient), R (proficient), C++ (course experience), Gurobi (proficient), Xpress (proficient), SQL (prior experience)

### Language

English (fluent), French (native), German (intermediate)

## Awards and Interests

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### Awards

Jean Gaillard Memorial Fellowship (2013-14) and Robert Guenassia Award (2013-14)

### Work authorization

USA under OPT (F-1 student visa)