

Alvaro Maggiar

RESEARCH SCIENTIST

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Education

Northwestern University

Evanston, IL

PHD IN INDUSTRIAL ENGINEERING AND MANAGEMENT SCIENCES

2014

- Thesis: *Optimization of smoothed functionals and applications of nonlinear programming to fastest path finding for vehicles in anisotropic media*

- George L. Nemhauser Doctoral Dissertation Award

MS IN INDUSTRIAL ENGINEERING AND MANAGEMENT SCIENCES

2011

- Arthur P. Hurter Award for Best First Year Student

Imperial College London

London, United Kingdom

MS IN MATHEMATICS AND FINANCE

2009

- with Distinction
- Thesis: *Active fixed-income portfolio management using the Black-Litterman model*

École des Mines de Nancy

Nancy, France

INGÉNIEUR CIVIL DES MINES

2009

- Applied Mathematics and Industrial Engineering

Experience

Amazon.com

Seattle, WA

SENIOR RESEARCH SCIENTIST

Dec 2017 - Present

- Apply advanced mathematical theory and statistical analysis to improve existing approaches
- Execute large-scale or highly complex projects and play a role in key aspects of a strategic project

RESEARCH SCIENTIST II

Apr 2016 - Nov 2017

- Project: *Joint Inventory and Revenue Management with Removal Decisions*
- Revenue Optimization
- Supply Chain and Inventory Management

RESEARCH SCIENTIST I

Sep 2014 - Mar 2016

- Build quantitative mathematical models of supply chain and transportation processes
- Perform quantitative, economic, and numerical analysis using statistical, machine-learning, and optimization tools to find both exact and heuristic solution strategies
- Create software prototypes to verify and validate the devised solutions methodologies

Northwestern University

Evanston, IL

RESEARCH ASSISTANT

Jun 2011 - Sep 2014

- Office of Naval Research, Autonomous Vehicle Dynamic Navigation System grant
- Research on optimal paths in direction dependent environments
- Research on derivative-free methods for expensive and noisy functions

Murex SAS

Paris, France

CONSULTANT

Nov 2009 - Mar 2010

- Validation of pricing and payoff models in the equity derivatives team

Rogge Global Partners

London, United Kingdom

RESEARCH INTERN

May 2009 - Sep 2009

- Study of a constrained portfolio optimization problem using the Black-Litterman model
- Responsible for the revision and improvement of a pre-existent portfolio optimizer and for writing its documentation

CNP Assurances

Paris, France

INTERN

Summer 2008

- Created a tool for the application of new rules regarding misrepresentations and the analysis of the consequences thereof
- Responsible for modeling the resource needs in function of the incoming workload

KPMG Entreprises

INTERN

- Assisted on different financial audit by compiling and analysing data

Levallois, France

Summer 2007

Valeo

WORKER

- Industrial experience as a worker on a wiper blades production chain

Bietigheim-Bissingen, Germany

Feb-Mar 2007

Aventis

INTERN

- Assisted on the elaboration of the semester business plan by analyzing sales data

Antony, France

Summer 2003

Honours & Awards

2017	SCOT Recognition Award for Ownership , Amazon	Seattle, WA
2016	George L. Nemhauser Doctoral Dissertation Award , Northwestern University	Evanston, IL
2013	Future Practitioner Colloquium Participant , INFORMS	Minneapolis, MN
2011	Arthur P. Hurter Award for Best First Year Student , Northwestern University	Evanston, IL
2010	Walter P. Murphy Graduate Fellowship , Northwestern University	Evanston, IL

Activities

2016	Reviewer , NSF Unsolicited Proposals Review Panel	Arlington, VA
2013	Treasurer , Northwestern University INFORMS Student Chapter	Evanston, IL
2007	Treasurer , Mines Services, Junior Enterprise of Mines de Nancy	Nancy, France

Languages and Skills

LANGUAGES

French	Native
Spanish	Native
English	Fluent
German	Intermediary, Goethe-Institut's Zertifikat Deutsch

COMPUTER SKILLS

Languages	Python, Java, C++, SQL, VBA, AMPL
Applications	Matlab, R, SAS, Minitab, \LaTeX , common database, spreadsheet and presentation software
OS	Windows, Linux

Publications

UNDER REVIEW

2017	Joint Inventory and Revenue Management with Removal Decisions , A. Maggiar & A. Sadighian
2017	Uniform Convergence of Sample Average Approximation with Adaptive Multiple Importance Sampling , A. Wächter, J. Staum, A. Maggiar, & M. Feng
2016	A Derivative-Free Trust-Region Algorithm for the Optimization of Functions Smoothed via Gaussian Convolution Using Adaptive Multiple Importance Sampling , A. Maggiar, A. Wächter, I. S. Dolinskaya & J. Staum

PUBLISHED

2014	Multi-Depot Vessel Routing Problem in a Direction Dependent Wavefield , M. J. Hirsch, D. E. Schroeder, A. Maggiar & I. S. Dolinskaya, Journal Of Combinatorial Optimization
2014	Construction of fastest curvature-constrained paths in direction dependent media , A. Maggiar & I. S. Dolinskaya, AIAA Journal of Guidance, Control and Dynamics
2012	Time-optimal Trajectories with Bounded Curvature in Anisotropic Media , I. S. Dolinskaya & A. Maggiar, The International Journal of Robotics Research