Matthieu Plumettaz

Ph.D. in Operations Research

400 W. 119th Street apt. 3S
New York, NY, 10027
+1 (646)-318-9506
mp2761@columbia.edu

Education

Fall 2008 - Spring 2014	**Ph.D. candidate in Operations Research** Columbia University, New York City, USA *Current research:* Structural Graph Theory, Claw-free Graphs *Advisor:* Prof. Maria Chudnovsky Columbia University Fellowship Research partially supported by NSF grant DMS-1001091
Feb. 2013	**M.Phil. in Operations Research** Columbia University, New York City, USA
March 2007	**M.Sc. in Mathematical Engineering** École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland *Thesis Title:* Variable Space Search for Graph Coloring *Advisor:* Dominique de Werra Thesis done at Laval University, Canada, under the supervision of Prof. Nicolas Zufferey
June 2005	**B.Sc. in Mathematics** École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland
Spring 2002	**Federal Maturity** Burier's Gymnasium, Burier, Switzerland *Option:* Applied Mathematics and Physics

Publications

- The Structure of Planar Cubic Graphs with no Induced Cycles of Length Divisible by Three (*with M. Chudnovsky, G. Gautier and P. Seymour*), in preparation
- The Structure of Graphs with no Cycles of Length Divisible by Three (*with M. Chudnovsky, A. Scott and P. Seymour*), in preparation
- On the Erdos-Lovasz Tihany Conjecture for Claw-Free Graphs (*with M. Chudnovsky and A. Fradkin*), submitted for publication
- The Structure of Claw-Free Perfect Graphs (*with M. Chudnovsky*), Journal of Graph Theory, 75:203-230, 2014
- A Local Strengthening of Reed's Omega, Delta, Chi Conjecture for Quasi-line Graphs *(with M. Chudnovsky, A. King and P. Seymour*), SIDMA, Vol 2 (2013), 95-108
- Ant Local Search and its Efficient Adaptation for Graph Colouring (*with D. Schindl and N. Zufferey*), Journal of the Operational Research Society 61:819-826, 2010
- Variable Space Search for Graph Coloring (*with A. Hertz and N. Zufferey),* Discrete Applied Mathematics 156(13):2551-2560, 2008
- An efficient Population-Based Extension of the PartialCol Algorithm (*with D. Schindl and N. Zufferey*), Proceedings of the 2nd INFORMS Workshop on Artificial Intelligence and Data Mining, Seattle, USA, November, 2007

Teaching Experience

Summer 2014	Columbia University, New York, NY, USA **Instructor** Appointed by the computer science department at Columbia University to teach the masters level course Analysis of Algorithms during the summer 2014.
Summer 2013	Columbia University, New York, NY, USA **Instructor** Taught the masters level course Analysis of Algorithms at the computer science department at Columbia University. Prepared classes and weekly homeworks. Administered the class and office hours. Prepared and graded the examinations.
Sept. 2008 - Present	Columbia University, New York, NY, USA **Teaching Assistant** Lectured recitation. Tutored and assisted students with course material. Lectured class when required. Graded and proctored examinations. Find below the taught courses. • Optimization II • Stochastic Model for Financial Engineering • Graph Theory: A Combinatorial View • Introduction to Mathematical Programming • Foundation of Financial Engineering • Production - Inventory Planning and Control • Introduction to OR: Deterministic Models
March 2007 – July 2008	École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland **Teaching Assistant** Lectured recitation. Tutored and assisted students with course material. Lectured class when required. Graded and proctored examinations. Prepared weekly exercises and examinations. Find below the taught courses. • Graphs and Networks • Decision Processes • Calculus I and II • Discrete Mathematics and Operations Research

Conferences and Presentations

Presentations	• The Structure of Graphs with no Cycles of Length Divisible by Three, Rutgers Discrete Math Seminar, Rutgers, New Brunswick, November, 2013 • The Structure of Graphs with no Cycles of Length Divisible by Three, Columbia Discrete Math Seminar, Columbia University, New York, November, 2013 • The Structure of Graphs with no Cycles of Length Divisible by Three, Discrete Mathematics and Optimization Seminar, McGill University, Montreal, October, 2013 • Graphs with no 0 mod 3 Cycles, Banff International Research Station, Geometric and Topological Graph Theory Workshop, Banff, October, 2013

Presentations (continued)	• The Structure of Graphs with no Cycles of Length Divisible by Three, Princeton Discrete Mathematics Seminar, Princeton University, Princeton, September, 2013
	• On the Erdos-Lovasz Tihany Conjecture for Claw-Free Graphs, Columbia Discrete Mathematics Seminar, Columbia University, New York, February, 2013
	• The Structure of Claw-Free Perfect Graphs, The Second Bertinoro Workshop on Algorithms and Graphs, Bertinoro, December, 2011
	• The Structure of Claw-Free Perfect Graphs, Columbia Discrete Math Seminar, Columbia University, New York, October, 2011
	• Ant Local Search for Graph Coloring, Graph and Optimization VI, Cademario, Switzerland, August, 2007
Attended	• Graph Theory Workshop, Bellairs Research Institute, Barbados, April, 2013
	• Second Workshop on Graphs and Matroids, Maastricht, Netherlands, August, 2010
	• DIMACS Workshop on Graph Colouring and Structure, Princeton, May, 2009

Languages

French	Native fluency
English	Fluent
Spanish	Basic knowledge
German	Basic knowledge

Services

Conference	Member of the organization team of the international conference '*Graph and Optimization VII*' that took place in Ovronnaz in June 2010. Responsible for all internet related tasks for the conference.
Reviewer	Discrete Applied Mathematics
	Artificial Intelligence
	Symposium on Discrete Algorithms 2013
Seminar	Member of the organization team of the spring 2011 IEOR-DRO Seminar at Columbia University

Extracurricular Activities

Ski	Practice since 1988.
Judo	Practice since 1991. Part of the organization of a yearly youth competition in Switzerland between 2001 and 2008.
Programming / Software	C++, Lua, Basic, html, Python, Matlab.
Tabletop	Board games. Assembling, painting and converting miniatures for tabletop games.