

Marc Renault

Computer Sciences Department
University of Wisconsin – Madison
1210 West Dayton Street
Madison, WI 53706-1685 USA
mrenault@cs.wisc.edu
pages.cs.wisc.edu/~mrenault

EDUCATION

PhD in Computer Science with distinction 2014

(Doctorat d’informatique, mention “Très Honorable”)

LIAFA, Université Paris Diderot-Paris 7, Paris, France

Thesis: Lower and Upper Bounds for Online Algorithms with Advice

Members of the jury:

Thesis Director: Adi Rosén, DR., CNRS, Paris 7

President: Frédéric Mangniez, DR., CNRS, Paris 7

Reader: Nikhil Bansal, Prof., Eindhoven University of Technology.

Reader: Christoph Dürr, DR., CNRS, Paris 6

Examiner: Pierre Fraigniaud, DR., CNRS, Paris 7

Examiner: Seffi Naor, Prof., Technion - Israel Institute of Technology

Examiner: Rob Van Stee, Lecturer, University of Leicester

Master of Research in Computer Science, *cum laude* 2010

(Master Parisien de Recherche en Informatique (MPRI), mention “Assez Bien”)

Université Paris Diderot-Paris 7, Paris, France

Thesis: Online Algorithms with Advice

Supervisor: Adi Rosén, DR2. LRI, Paris 11

Bachelor of Computer Science, Sexton Distinction 2002

Dalhousie University, Halifax, Nova Scotia, Canada

ACADEMIC APPOINTMENTS

Assistant Faculty Associate, Aug 2017
Computer Sciences Department, – Present
University of Wisconsin – Madison
Madison, WI, USA

Assistant Professor, Jan 2017
Department of Mathematics & Computer Science, – Aug 2017
Mount Allison University
Sackville, NB, Canada

Associate Researcher, LIP6, Université Pierre et Marie Curie-Paris 6 Paris, France	Oct 2016 – Sept 2017
Postdoctoral Researcher, CNRS, IRIF, Université Paris Diderot-Paris 7 Paris, France	Oct 2015 – Sept 2016
1 yr Researcher/Lecturer (Attaché temporaire d'enseignement et de recherche), UFR 919 d'ingénierie, Université Pierre et Marie Curie-Paris 6 Full teaching load (192h) Paris, France	Sept 2014 – Aug 2015

TEACHING EXPERIENCE

Department of Mathematics & Computer Science, University of Wisconsin – Madison Madison, WI, USA	Aug 2017 – Present
<ul style="list-style-type: none"> • CS200 – Programming I (2017-2018) 	
Department of Mathematics & Computer Science, Mount Allison University Sackville, NB, Canada	Jan 2017 – Aug 2017
<ul style="list-style-type: none"> • COMP2931 – Introduction to Systems Programming (2016-2017) • COMP4721 – Software Design (2016-2017) 	
UFR 919 d'ingénierie, Université Pierre et Marie Curie-Paris 6 Paris, France	Sept 2014 – Aug 2015
<ul style="list-style-type: none"> • 1I001 – Éléments de programmation 1 [Elements of programming 1] (2014-2015) • LI345 – Bases de données et sites web [Databases and websites] (2014-2015) • LI353 – Modélisation et résolution de problèmes [Modelling and problem solving] (2014-2015) • LI355 – Programmation des architectures clients-serveur [Programming on client-server architectures] (2014-2015) 	
UFR d'informatique, Université Paris Diderot-Paris 7 Paris, France	Oct 2011 – Aug 2014
<ul style="list-style-type: none"> • IF1 – Introduction à l'informatique [Introduction to computer science] (2011-2012, 2013-2014) • IK3 – Projet informatique [Computer science project] (2013-2014) • EA4 – Éléments d'algorithmique [Algorithmic elements] (2012-2013) • LC4 – Langage C et outils de développement [C language and programming tools] (2012-2013) • BD6 – Bases de données [Databases] (2011-2012, 2012-2013, 2013-2014) • PR6 – Programmation réseaux [Network programming] (2013-2014) 	

RELEVANT INDUSTRY EXPERIENCE

Ren Solutions – Owner and Head Developer Halifax, NS, Canada	Jul 2003 – Aug 2009
--	------------------------

- Designed custom programs that integrated with the ERP SYSPRO, focusing on streamlining and automating business processes in order to improve efficiency, increase productivity and gather more information.
- Performed technical support for clients with SYSPRO ERP.
- Aided various research projects in the Department of Pathology, Dalhousie University, by providing custom programs to analyse biological data, resulting in two journal publications.
- Developed numerous websites using a variety of technologies including: HTML, CSS, SSI, MySQL, PHP, JavaScript, Java Servlets and Joomla.
- Hired and managed one programmer and one sales representative.

Program Applications Limited (PAL) – Technical Specialist
Halifax, NS, Canada

May 2002
– Jul 2003

- Built and maintained custom programs using C++, C, Perl, and Access to enhance and tailor SYSPRO.

AWARDS AND DISTINCTIONS

xxxii EURO Summer Institute Laureate, University of Szeged, Hungary		2015
Contrat Doctoral from Université Pierre et Marie Curie	~ €60,000	2010 – 2013
Contrat Doctoral from Université Paris-Sud 11 (Declined)	~ €60,000	2010 – 2013
Joseph Duncan Stewart Scholarship, Dalhousie University	\$1,000 CAD	1999 - 2000
One of the top five students in Canada identified by the Selection Committee, Lucent Global Science Scholars Program Scholarship	\$500 CAD	1999
Entrance Amalgamation Scholarship, Dalhousie University	\$3,000 CAD	1998 - 1999

RESEARCH GRANTS

Gaspard Monge Optimization and Operations Research Grant for €7,000 2017 – 2019
Bijjective and Stochastic Dominance in Online Computation
 joint with Spyros Angelopoulos (LIP6, UPMC - Paris 6, France),
 Christoph Dürr (LIP6, UPMC - Paris 6, France), and Pascal Schweitzer
 (RTWH Aachen University, Germany)

Gaspard Monge Optimization and Operations Research Grant for €7,000 2015 – 2017
Search and Surveillance Games: Theory, Algorithms and Applications
 joint with Spyros Angelopoulos (LIP6, UPMC - Paris 6, France),
 Christoph Dürr (LIP6, UPMC - Paris 6, France), Thomas Lidbetter
 (LSE, UK) and Katerina Papadiki (LSE, UK)

French National Research Agency program Blanc for
NeTOC (New Techniques in Online Computation) €236,080 2011 – 2015
 [ANR-11-BS02-0015]
 joint with Spyros Angelopoulos (LIP6, UPMC - Paris 6, France),
 Christoph Dürr (LIP6, UPMC - Paris 6, France), Pierre Fraigniaud
 (LIAFA, Paris 7, France), Giorgio Lucarelli (LIP6 - Paris 6, France),
 and Adi Rosén (LIAFA, Paris 7, France).

PUBLICATIONS

- Peer-reviewed Journal Papers: 6
- Peer-reviewed Conference Papers: 5
- Published Abstracts: 4

Theoretical Computer Science

(Note that authors are listed in alphabetical order ¹)

Peer-reviewed Journal Papers:

4. **Renault MP**. Online Algorithms with Advice for the Dual Bin Packing Problem. *Central European Journal of Operations Research*; to appear, 2016.
3. Adamaszek A, **Renault MP**, Rosén A, van Stee R. Reordering Buffer Management with Advice. *Journal of Scheduling*; to appear, 2016. (Preliminary version appeared in WAOA 2013.)
2. **Renault MP**, Rosén A, van Stee R. Online Algorithms with Advice for Bin Packing and Scheduling Problems. *Theoretical Computer Science*; 600: 155-170, 2015.
1. **Renault MP**, Rosén A. On Online Algorithms with Advice for the k -Server Problem. *Theory of Computing Systems*; 56 (1): 3–21, 2015. (Preliminary version appeared in WAOA 2011.)

Peer-reviewed Conference Papers:

5. Dürr C, Konrad C, **Renault MP**. On the Power of Advice and Randomization for Online Bipartite Matching. *In Proc. of the 24th Annual European Symposium on Algorithms (ESA 2016)*; LIPIcs 57: 37:1–37:16, 2016.
4. Angelopoulos S, Dürr C, Kamali S, **Renault MP**, Rosén A. Online Bin Packing with Advice of Small Size. *In Proc. of Algorithms and Data Structures - 14th International Symposium (WADS 2015)*; LNCS 9214: 40–53, 2015.
3. López-Ortiz A, **Renault MP**, Rosén A. Paid Exchanges are Worth the Price. *In Proc. of the 32nd Symposium on Theoretical Aspects of Computer Science (STACS 2015)*; LIPIcs 30: 636–648, 2015.
2. Adamaszek A, **Renault MP**, Rosén A, van Stee R. Reordering Buffer Management with Advice. *In Proc. of the 11th Workshop on Approximation and Online Algorithms (WAOA 2013)*; LNCS 8447: 132–143, 2014.
1. **Renault MP**, Rosén A. On Online Algorithms with Advice for the k -Server Problem. *In Proc. of the 9th Workshop on Approximation and Online Algorithms (WAOA 2011)*; LNCS 7164: 198–210, 2012. (Invited to Theory of Computing Systems, special issue for WAOA 2011.)

Technical Reports:

1. Angelopoulos S, **Renault MP**, Schweitzer P. Stochastic Dominance and the Bijective Ratio of Online Algorithms. arXiv preprint arXiv:1607.06132, 2016.

¹The custom for theoretical computer science and mathematics is to list the authors in alphabetical order (cf. Remark by AMS: <http://www.ams.org/profession/leaders/culture/CultureStatement04.pdf>).

Applied Bioinformatics

Peer-reviewed Journal Papers:

2. Copeland E, Renault NKE, **Renault MP**, Dyack S, Bulman DE, Bedard K, Otley A, Magee F, Acott P, Greer WL. A Novel Splice-Site Mutation in ATP8B1 Results in Atypical Progressive Familial Intrahepatic Cholestasis Type 1. *Journal of Gastroenterology and Hepatology*; 28 (3): 560–564, 2013.
1. Renault NKE, **Renault MP**, Copeland E, Howell RE, Greer WL. Familial skewed X-chromosome inactivation linked to a component of the cohesin complex, SA2. *Journal of Human Genetics*; 56 (5): 390–397, 2011.

Published Abstracts:

4. Renault N, Kervadec A, Bellamy V, El Harane N, Thiebault L, Nematalla H, Pidial L, Lemitre M, Cagnard N, Smit N, Meijborg V, Brunaud C, **Renault MP**, Colas A, Hagège A, Coronel R, Mercola M, Silvestre JS, Menasché P. Extracellular Vesicles Secreted by Human Cardiac Progenitors Are an Effective Alternative to Cell Transplantation for Chronic Heart Failure. *Circulation*; 134 (Suppl 1): A16533, 2016.
3. Kervadec A, Bellamy V, El Harane N, Smit N, Meijborg V, Nematalla H, Périer MC, **Renault MP**, Colas A, Hagège A, Coronel R, Mercola M, Silvestre JS, Menasché P, Renault NKE. Extracellular vesicles as effective substitutes for cell therapy for chronic heart failure. *European Heart Journal, European Society of Cardiology Congress supplement*; 37 (Supp 1): 397, 2016.
2. Renault NKE, Copeland E, **Renault MP**, Riddell DC, Dobson MJ, Howell RE, Dyack S, Greer WL. STAG2 may influence X-chromosome inactivation choice in a family with hemophilia expression in females. *Pathology – Research and Practice*; 206: 209, 2010.
1. Copeland E, Dyack S, Renault NKE, **Renault MP**, Bulman DE, Greer WL. Genetic Analysis of a Nova Scotia Kindred with an Alagille-Like Syndrome. *Pathology – Research and Practice*; 206: 207, 2010.

PRESENTATIONS

(* indicates presenter)

- International Conference Presentations: 14 (8 presenter)
- Invited Presentations: 2 (2)
- National Conference Presentations: 1 (1)
- Seminar Presentations: 12 (12)

Theoretical Computer Science

International Conference Presentations:

10. Dürr C, Konrad C*, **Renault MP**. On the Power of Advice and Randomization for Online Bipartite Matching. 24th Annual European Symposium on Algorithms (ESA 2015), Aarhus, Denmark, Aug 22–24, 2016.
9. Korman A, **Renault MP***, Yovel Y. Social foraging and non-persistent food patches. Lorentz Center – Search Games: Theory and Algorithms, Leiden, Netherlands, Jun 26 - Jul 1, 2016.
8. Angelopoulos S, Dürr C, Kamali S, **Renault MP***, Rosén A. Online Bin Packing with Small Advice. Workshop - New Techniques in Online Algorithms, Paris, France, Nov 12–13, 2015.

7. Angelopoulos S, Dürr C, Kamali S*, **Renault MP**, Rosén A. Online Bin Packing with Advice of Small Size. 14th Algorithms and Data Structures Symposium (WADS 2015), Victoria, BC, Canada, Aug 5–7, 2015.
6. **Renault MP***. Online Algorithms with Advice for the Dual Bin Packing Problem. XXXII Euro Summer Institute (ESI 2015), Szeged, Hungary, June 15–27, 2015.
5. López-Ortiz A, **Renault MP***, Rosén A. Paid Exchanges are Worth the Price. 4th French-Israeli Workshop on Foundations of Computer Science (FILOFOCS 2014), Tel Aviv, Israel, May 25–27, 2015.
4. López-Ortiz A, **Renault MP***, Rosén A. Paid Exchanges are Worth the Price. 32nd Symposium on Theoretical Aspects of Computer Science (STACS 2015), Munich, Germany, Mar 4–7, 2015.
3. Adamaszek A, **Renault MP***, Rosén A, van Stee R. Reordering Buffer Management with Advice. 11th Workshop on Approximation and Online Algorithms (WAOA 2013), Sophia Antipolis, France, Sept 5–6, 2013.
2. **Renault MP***, Rosén A, van Stee R. Online Scheduling and Bin Packing with Advice. 2nd French-Israeli Workshop on Foundations of Computer Science (FILOFOCS 2013), Tel Aviv, Israel, April 9–11, 2013.
1. **Renault MP***, Rosén A. On Online Algorithms for the k -Server Problem with Advice. 9th Workshop on Approximation and Online Algorithms (WAOA 2011), Saarbrücken, Germany, Sept 8–9, 2011.

Invited Presentations:

2. Adamaszek A, **Renault MP***, Rosén A, van Stee R. A PTAS-Like Online Algorithm with Advice for the Reordering Buffer Management Problem. Algorithmique à Garantie de Performance (GDR RO - AGaPE), Université Pierre et Marie Curie - Paris 6, Paris, France, Dec 12, 2014.
1. **Renault MP***. Online Algorithms with Advice. 31ème Journées Franciliennes de Recherche Opérationnelle (JFRO), Université Pierre et Marie Curie - Paris 6, Paris, France, June 25, 2014.

National Conference Presentations:

1. Angelopoulos S, Dürr C, Lidbetter T, Papadaki KP, **Renault MP***. Star Search Problems. Programme Gaspard Monge pour l'Optimisation (PGMO), ENSTA Paris Tech, Palaiseau, France, Oct 27–28, 2015.

Seminar Presentations:

12. Angelopoulos S, **Renault MP***, Schweitzer P. New techniques for analysing online algorithms: matching theory to practice. Mount Allison University, Sackville, NB, Canada, Jan 23, 2017.
11. Angelopoulos S, **Renault MP***, Schweitzer P. Stochastic dominance and bijective analysis of online algorithms: matching theory to practice. St. Francis Xavier University, Antigonish, NS, Canada, Oct 31, 2016.
10. Angelopoulos S, **Renault MP***, Schweitzer P. Stochastic dominance and bijective analysis of online algorithms: matching theory to practice. Saint Mary's University, Halifax, NS, Canada, Oct 26, 2016.
9. Angelopoulos S, **Renault MP***, Schweitzer P. Stochastic dominance and bijective analysis of online algorithms: matching theory to practice. Dalhousie University, Halifax, NS, Canada, Oct 25, 2016.
8. Angelopoulos S, **Renault MP***, Schweitzer P. New techniques for analysing online algorithms: matching theory to practice. University of Prince Edward Island, Charlottetown, PEI, Canada,

Oct 24, 2016.

7. Angelopoulos S, **Renault MP***, Schweitzer P. Stochastic dominance and bijective analysis of online algorithms: matching theory to practice. Acadia University, Wolfville, NS, Canada, Oct 21, 2016.
6. Angelopoulos S, **Renault MP***, Schweitzer P. The bijective ratio of online algorithms. London School of Economics, London, United Kingdom, June 15, 2016.
5. **Renault MP***, Rosén A. Lower and upper Bounds for Online Algorithms with Advice: k -Server Problem. Université Pierre et Marie Curie - Paris 6, Paris, France, Oct 2, 2014.
4. Adamaszek A, **Renault MP***, Rosén A, van Stee R. On Online Algorithms with Advice for the Reordering Buffer Management Problem. Reykjavik University, Reykjavik, Iceland, June 13, 2014.
3. **Renault MP***, Rosén A. The k -Server Problem with Advice. Waterloo University, Waterloo, ON, Canada, July 18, 2012.
2. **Renault MP***, Rosén A. On Online Algorithms with Advice for the k -Server Problem. Max Planck Institut Informatik, Saarbrücken, Germany, April 4, 2012.
1. **Renault MP***, Rosén A. On Online Algorithms for the k -Server Problem with Advice. Dalhousie University, Halifax, NS, Canada, Dec 21, 2011.

Applied Bioinformatics

International Conference Presentations:

4. Kervadec A*, Bellamy V, El Harane N, Smit N, Meijborg V, Nematalla H, Périer MC, **Renault MP**, Colas A, Hagège A, Coronel R, Mercola M, Silvestre JS, Menasché P, Renault NKE. Extracellular vesicles as effective substitutes for cell therapy for chronic heart failure. European Society of Cardiology Congress 2016, Rome, Italy, Aug 27–31, 2016.
3. Renault NKE*, Copeland E, **Renault MP**, Howell RE, Greer WL. Human X-chromosome inactivation is genetically controlled. Poster presentation, EMBO/EMBL Human Variation: Cause and Consequence, Heidelberg, Germany, June 20–23, 2010.
2. Renault NKE, Howell RE, **Renault MP**, Dyack S, Greer WL*. Hemophilia A in carriers, due to skewed X-chromosome inactivation, impacts the quality of life of affected females. Abstract #31 PO 10. XXVIII International Congress of the World Federation of Hemophilia, Istanbul, Turkey, June 1–5, 2008.
1. Renault NKE*, Dobson MJ, Costa T, **Renault MP**, Howell RE, Mitnitski A, Greer WL. Hemophilia A in multiple heterozygous females due to familial skewed X-chromosome inactivation. Poster presentation, 2nd International Conference on X-chromosome Inactivation, Paris, France, Sept 17–22, 2006.

ACTIVITIES AND CONTRIBUTIONS

Administrative activities

- Co-organiser for 6th French-Israeli Workshop on Foundations of Computer Science (FILOFOCS) 2017.
- Member of Local Organising Committee for Random-Approx 2016 Conference in Paris, France.
- Co-organiser for 5th French-Israeli Workshop on Foundations of Computer Science (FILOFOCS) 2016.
- Co-organiser for 3rd French-Israeli Workshop on Foundations of Computer Science (FILOFOCS) 2014.

Participation in Invitation-Only Conferences

- Workshop on Search Games and Rendezvous 2017, London, July 6–7, 2017
- GRASTA 2017: Workshop on Graph Searching Theory and Applications, Anogia, Greece, April 10–13, 2017
- Lorentz Center – Search Games: Theory and Algorithms, Leiden, Netherlands, June 26 – July 1, 2016.
- Workshop on Search Games and Rendezvous 2015, London, July 6–7, 2015
- XXXII Euro Summer Institute (ESI 2015), Szeged, Hungary, June 15–27, 2015.

Open source projects

- Contributor to the cURL project, curl.haxx.se (2014)

Peer-review activities

- 2017: Algorithmica, Conference on Algorithms and Complexity (CIAC); International Colloquium on Automata, Languages and Programming (ICALP); Theory of Computing Systems (TOCS)
- 2016: ACM Computing Surveys; Scandinavian Symposium and Workshops on Algorithm Theory (SWAT); Symposium on Theoretical Aspects of Computer Science (STACS); TOCS
- 2015: Information and Computation
- 2014: Journal of Discrete Algorithms; TOCS
- 2013: Workshop on Approximation and Online Algorithms (WAOA)
- 2012: Latin American Theoretical Informatics Symposium (LATIN); International Conference on Current Trends in Theory and Practice of Computer Science (SOFSEM); WAOA

LANGUAGES

English (native) and French (fluent).