

**Jean-Lou De Carufel**  
**Curriculum vitae**

**EDUCATION**

- 01/2011 - 06/2015      **Postdoc**  
*Carleton University - School of Computer Science*  
*Ottawa, Ontario, Canada*  
Subject : Computational geometry  
Advisors : Prosenjit Bose, Vida Dujmović, Anil Maheshwari, Pat Morin  
and Michiel Smid
- 11/2009 - 12/2010      **Postdoc**  
*Université d'Ottawa - Ottawa-Carleton Institute for Computer Science*  
*Ottawa, Ontario, Canada*  
Subject : Computational geometry and computer vision  
Advisors : Prosenjit Bose and Robert Laganière
- 05/2009 - 08/2009      **6 credits of graduate courses in education**  
*University of Ottawa - Faculty of Education*  
*Ottawa, Ontario, Canada*
- 09/2003 - 01/2009      **Ph.D. in computer science**  
*Université Laval - Département d'informatique et de génie logiciel*  
*Québec, Québec, Canada*  
Subject : Formal methods  
Advisor : Jules Desharnais
- 09/1997 - 08/2003      **39 credits of undergraduate courses in computer science**  
*Université Laval - Département d'informatique et de génie logiciel*  
*Québec, Québec, Canada*
- 09/2000 - 12/2002      **Masters degree in mathematics**  
*Université Laval - Département de mathématiques et de statistique*  
*Québec, Québec, Canada*  
Subject : Algebraic structures  
Advisor : Claude Levesque
- 09/1997 - 04/2000      **Bachelor degree in mathematics**  
*Université Laval - Département de mathématiques et de statistique*  
*Québec, Québec, Canada*

**WORK EXPERIENCE**

- 08/2015 - Now              **Assistant professor**  
*University of Ottawa - School of Electrical Engineering and Computer*  
*Science*  
*Ottawa, Ontario, Canada*
- 10/2008 - Now              **Speaker and designer for Show Math**

- Université Laval - Département de mathématiques et de statistique  
Québec, Québec, Canada*  
SMAC project supervised by Jean-Marie De Koninck
- 05/2008 - 08/2015 **Lecturer in mathematics and computer science**  
*Université du Québec en Outaouais - Département d'informatique et  
d'ingénierie  
Gatineau, Québec, Canada*
- 01/2011 - 04/2011 **Lecturer in computer science**  
*Carleton University, School of Computer Science  
Ottawa, Ontario, Canada*
- 09/2008 - 08/2009 **Lecturer in mathematics education**  
*University of Ottawa - Faculty of Education  
Ottawa, Ontario, Canada*
- 01/2007 - 05/2009 **Mathematics teacher**  
Collège Nouvelles Frontières - Secteur collégial
- 01/2005 - 08/2008 **Lecturer in computer science**  
*Université Laval - Département d'informatique et de génie logiciel  
Québec, Québec, Canada*
- 01/2004 - 08/2007 **Teaching assistant in computer science**  
*Université Laval - Département d'informatique et de génie logiciel  
Québec, Québec, Canada*
- 01/2007 - 04/2007 **Mathematics teacher**  
*Collège Nouvelles Frontières - Secteur secondaire  
Gatineau, Québec, Canada*
- 09/2001 - 04/2004 **Lecturer in mathematics**  
*Université Laval - Département de mathématiques et de statistique  
Québec, Québec, Canada*
- 09/1998 - 12/2003 **Teaching assistant in mathematics**  
*Université Laval - Département de mathématiques et de statistique  
Québec, Québec, Canada*
- 05/1999 - 08/1999 **Research assistant in mathematics**  
*Université Laval - Département de mathématiques et de statistique  
Québec, Québec, Canada*  
Advisor : Jean-Marie De Koninck
- 05/1998 - 08/1998 **Research assistant in mathematics**  
*Université Laval - Département de mathématiques et de statistique  
Québec, Québec, Canada*  
Advisor : Jean-Marie De Koninck

## GRANTS

<b>Duration</b>	<b>Source</b>	<b>Amount</b>	<b>Type</b>	
2016 - 2021	NSERC	\$110 000	Discovery grant	
2013 - 2015	IdEx Bordeaux (France)	€90 800	Postdoctoral research fellowship	<i>DECLINED</i>
2011 - 2013	FQRNT	\$60 000	Postdoctoral research fellowship	
2012	FNRS (Belgium)	€3 900	Bourse de séjour scientifique (IN)	
2005 - 2006	FQRNT	\$26 666	Ph.D. grant	
2005	<i>Fondation de l'Université Laval</i>	<i>\$12 000</i>	<i>Ph.D. grant</i>	<i>DECLINED</i>
2003 - 2004	NSERC	\$39 300	Ph.D. grant	
2003	Université Laval	\$2 000	Ph.D. grant	
2000 - 2002	NSERC	\$34 600	Masters degree grant	
2000 - 2002	<i>FQRNT</i>	<i>\$30 100</i>	<i>Masters degree grant</i>	<i>DECLINED</i>
2000	Département de mathématiques et de statistique, Université Laval	\$300	Excellence scholarship (MAT-19517)	
1999	NSERC	\$5 000	Undergraduate Student Research Awards	
1998	North American Life Insurance Company	\$500	Excellence scholarship	
1997	Université Laval	\$500	Excellence scholarship	

## ACHIEVEMENTS AND AWARDS

- 2002 - 2003 Honour list of the Faculté des études supérieures, Université Laval
- 2001 1<sup>st</sup> exam of the Society of actuaries (SOA)
- 1997 - 2000 Honour list of the Département de mathématiques et de statistique, Université Laval

## CONTRIBUTIONS TO THE SCIENTIFIC COMMUNITY

External referee for Symposium on Computational Geometry (SoCG), Algorithmica (Springer), Bulletin de l'Association Mathématique du Québec, Canadian Conference on Computational Geometry (CCCG), European Workshop on Computational Geometry (EuroCG), International Journal of Computational Geometry and Applications (World Scientific), Journal of Graph Algorithms and Applications, Journal of Logic and Algebraic Programming (Elsevier), Mathematics of Program Construction (Springer), Relational Methods in Computer Science and Applications of Kleene Algebra (ReLMiCS/AKA), Science of Computer Programming (Elsevier), The Visual Computer (Springer) and Theoretical Computer Science (Elsevier).

- 2014 - 2015 Judge for the Ottawa Regional Science Fair.
- 2015 PC member for the International Symposium on Algorithms and Experiments for Wireless Sensor Networks (ALGOSENSORS), Track Wireless & Geometry.
- 2009 Judge for the Regional Science Fair Final, Conseil du loisir scientifique de l'Outaouais.
- 2009 Proof reader, Jean-Marie De Koninck. Those Fascinating Numbers, American Mathematical Society, 426 pages, 2009.
- 2007 Proof reader, Jean-Marie De Koninck and Armel Mercier. 1001 Problems in Classical Number Theory, American Mathematical Society, 336 pages, 2007.
- 2004 - 2006 Member of the undergraduate program committee in mathematics and computer science, Université Laval.
- 1998 - 2000 Member of the undergraduate program committee in mathematics, Université Laval.

## **PUBLICATIONS**

### Journals with Program Committee

1. †Prosenjit Bose, Jean-Lou De Carufel and André van Renssen. Constrained generalized Delaunay graphs are plane spanners. Computational Geometry : Theory and Applications, Elsevier, Volume 74 : 50 - 75, 2018.
2. †Eunjin Oh, Jean-Lou De Carufel and Hee-Kap Ahn. The geodesic 2-center problem in a simple polygon. Computational Geometry : Theory and Applications, Elsevier, Volume 74 : 21 - 37, 2018.
3. †Davood Bakhshesh, Luis Barba, Prosenjit Bose, Jean-Lou De Carufel, Mirela Damian, Rolf Fagerberg, Mohammad Farshi, André van Renssen, Perouz Taslakian and Sander Verdonschot. Continuous Yao graphs. Computational Geometry : Theory and Applications, Elsevier, Volume 67 : 42 - 52, 2018.
4. †Nicolas Bonichon, Prosenjit Bose, Jean-Lou De Carufel, Ljubomir Perković and André van Renssen. Upper and Lower Bounds for Online Routing on Delaunay Triangulations. Discrete & Computational Geometry, Springer, Volume 58(2) : 482 - 504, 2017.
5. †Prosenjit Bose, Jean-Lou De Carufel, Stephane Durocher and Perouz Taslakian. Competitive Online Routing on Delaunay Triangulations. International Journal of Computational Geometry & Applications, World Scientific, Volume 27(4) : 241 - 254, 2017.
6. †Prosenjit Bose, Jean-Lou De Carufel, Alina Shaikhet and Michiel Smid. Essential Constraints of Edge-Constrained Proximity Graphs. Journal of Graph Algorithms and Applications, volume 21(4) : 389 - 415, 2017.
7. †Jean-Lou De Carufel, Matthew Katz, Matias Korman, André van Renssen, Marcel Roeloffzen and Shakhar Smorodinsky. On interference among moving sensors and related problems. Journal of Computational Geometry, Volume 8(1) : 32 - 46, 2017.
8. †Ahmad Biniaz, Prosenjit Bose, Jean-Lou De Carufel, Cyril Gavoille, Anil Maheshwari and Michiel Smid. Towards plane spanners of degree 3. Journal of Computational Geometry, Volume 8(1) : 11 - 31, 2017.

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†. *In computational geometry, authors name are traditionally written in alphabetical order.*

9. †Prosenjit Bose and Jean-Lou De Carufel : A general framework for searching on a line. *Theoretical Computer Science*, Elsevier, Volume 703 : 1 - 17, 2017.
10. †Prosenjit Bose, Jean-Lou De Carufel, Alina Shaikhet and Michiel Smid. Probing convex polygons with a wedge. *Computational Geometry : Theory and Applications*, Elsevier, Volume 58 : 34 - 59, 2016.
11. †Hee-Kap Ahn, Luis Barba, Prosenjit Bose, Jean-Lou De Carufel, Matias Korman and Eunjin Oh. A Linear-Time Algorithm for the Geodesic Center of a Simple Polygon. *Discrete & Computational Geometry*, Springer, Volume 56(4) : 836 - 859, 2016.
12. †Mahdi Amani, Ahmad Biniiaz, Prosenjit Bose, Jean-Lou De Carufel, Anil Maheshwari and Michiel Smid. A plane 1.88-spanner for points in convex position. *Journal of Computational Geometry*, Volume 7(1) : 520 - 539, 2016.
13. †Prosenjit Bose, Paz Carmi, Mirela Damian, Jean-Lou De Carufel, Darryl Hill, Anil Maheshwari, Yuyang Liu and Michiel Smid. On the stretch factor of convex polyhedra whose vertices are (almost) on a sphere. *Journal of Computational Geometry*, Volume 7(1) : 444 - 472, 2016.
14. †Aritra Banik, Jean-Lou De Carufel, Anil Maheshwari and Michiel Smid. Discrete Voronoi Games and  $\epsilon$ -Nets, in Two and Three Dimensions. *Computational Geometry : Theory and Applications*, Elsevier, Volume 55 : 41-58, 2016.
15. †Prosenjit Bose, Jean-Lou De Carufel, Pat Morin, André van Renssen and Sander Verdonschot. Towards Tight Bounds on Theta-Graphs. *Theoretical Computer Science*, Elsevier, Volume 616 : 70 - 93, 2016.
16. †Greg Aloupis, Luis Barba, Jean-Lou De Carufel, Stefan Langerman and Diane Souvaine. Isoperimetric Enclosures (**invited paper**). *Graphs and Combinatorics*, Springer, Volume 31(2) : 361 - 392, 2015.
17. †Prosenjit Bose, Jean-Lou De Carufel, Carsten Grimm, Anil Maheshwari and Michiel Smid. Optimal Data Structures for Farthest-Point Queries in Cactus Networks. *Journal of Graph Algorithms and Applications*, Volume 19(1) : 11-41, 2015.
18. †Prosenjit Bose, Jean-Lou De Carufel and Stephane Durocher. Searching on a Line : A Complete Characterization of the Optimal Solution. *Theoretical Computer Science*, Elsevier, Volume 569 : 24-42, 2015.
19. †Jean-Lou De Carufel, Carsten Grimm, Anil Maheshwari, Megan Owen and Michiel Smid. A Note on the Unsolvability of the Weighted Region Shortest Path Problem. *Computational Geometry : Theory and Applications*, Elsevier, Volume 47(7) : 724-727, 2014.
20. †Jean-Lou De Carufel, Amin Gheibi, Anil Maheshwari, Jörg-Rüdiger Sack and Christian Scheffer. Similarity of Polygonal Curves in the Presence of Outliers. *Computational Geometry : Theory and Applications*, Elsevier, Volume 47(5) : 625-641, 2014.
21. †Prosenjit Bose and Jean-Lou De Carufel. Minimum Enclosing Area Triangle with a Fixed Angle. *Computational Geometry : Theory and Applications*, Elsevier, Volume 47(1) : 90-109, 2014.
22. †Prosenjit Bose, Kai Dannies, Christoph Doell, Jean-Lou De Carufel, Carsten Grimm, Anil Maheshwari, Stefan Schirra and Michiel Smid. Network Farthest-Point Diagrams and their Application to Feed-Link Network Extension. *Journal of Computational Geometry*, Volume 4(1) : 182 - 211, 2013.

23. †Prosenjit Bose and Jean-Lou De Carufel. Isoperimetric Triangular Enclosures with A Fixed Angle. *Journal of Geometry*, Springer, Volume 104(2) : 229 - 255, 2013.
24. Jean-Lou De Carufel and Jules Desharnais. Abstract Representation Theorems for Demonic Refinement Algebras (**invited paper**). *Journal of Logic and Algebraic Programming*, Volume 79(8) : 740 - 767, 2010.
25. Jean-Lou De Carufel. Apprendre à parler à des machines. *Accromaths*, Volume 2(1) : 26 - 30, 2007.
26. Jean-Lou De Carufel. A few identities involving partitions with a fixed number of parts. *Ars Combinatoria*, Volume 68 : 125 - 130, 2003.

Conference Proceedings with Program Committee

1. †Nicolas Bonichon, Prosenjit Bose, Jean-Lou De Carufel, Vincent Despré, Darryl Hill and Michiel Smid. On Interference Among Moving Sensors and Related Problems. *European Symposium on Algorithms (ESA)*, 22 : 1 - 13, 2018.
2. Jean-Lou De Carufel and Paola Flocchini. Fault-Induced Dynamics of Oblivious Robots on a Line. *International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS)*, Springer, *Lecture Notes in Computer Science*, Volume 10616 : 126 - 141, 2017.
3. †Jean-Lou De Carufel, Carsten Grimm, Stefan Schirra and Michiel Smid. Minimizing the Continuous Diameter When Augmenting a Tree with a Shortcut. *Algorithms and Data Structures Symposium (WADS)*, Springer, *Lecture Notes in Computer Science*, Volume 10389 : 301 - 312, 2017.
4. †Prosenjit Bose, Jean-Lou De Carufel, Vida Dujmovic and Frédéric Paradis. Local Routing in Spanners Based on WSPDs. *Algorithms and Data Structures Symposium (WADS)*, Springer, *Lecture Notes in Computer Science*, Volume 10389 : 205-216, 2017.
5. †Ahmad Biniiaz, Prosenjit Bose, Kimberly Crosbie, Jean-Lou De Carufel, David Eppstein, Anil Maheshwari and Michiel Smid. Maximum Plane Trees in Multipartite Geometric Graphs. *Algorithms and Data Structures Symposium (WADS)*, Springer, *Lecture Notes in Computer Science*, Volume 10389 : 193-204, 2017.
6. †Ahmad Biniiaz, Prosenjit Bose, Jean-Lou De Carufel, Cyril Gavoille, Anil Maheshwari and Michiel Smid. Towards Plane Spanners of Degree 3. *International Symposium on Algorithms and Computation (ISAAC)*, 19 : 1 - 14, 2016
7. †Jean-Lou De Carufel, Matthew J. Katz, Matias Korman, André van Renssen, Marcel Roeloffzen and Shakhar Smorodinsky. On Interference Among Moving Sensors and Related Problems. *European Symposium on Algorithms (ESA)*, 34 : 1 - 11, 2016.
8. †Prosenjit Bose, Jean-Lou De Carufel, Alina Shaikhet and Michiel Smid. Essential Constraints of Edge-Constrained Proximity Graphs. *International Workshop on Combinatorial Algorithms (IWOCA)*, Springer, *Lecture Notes in Computer Science*, Volume 9843 : 55 - 67, 2016.
9. †Jean-Lou De Carufel, Carsten Grimm, Anil Maheshwari and Michiel Smid. Minimizing the Continuous Diameter when Augmenting Paths and Cycles with Shortcuts. *Scandinavian Symposium and Workshops on Algorithm Theory (SWAT)*, 27 : 1 - 14, 2016.

10. †Mahdi Amani, Ahmad Biniiaz, Prosenjit Bose, Jean-Lou De Carufel, Anil Maheshwari and Michiel Smid : A Plane 1.88-Spanner for Points in Convex Position. Scandinavian Symposium and Workshops on Algorithm Theory (SWAT), 25 : 1 - 14, 2016
11. †Prosenjit Bose and Jean-Lou De Carufel. A General Framework for Searching on a Line. International Workshop on Algorithms and Computation(WALCOM), Springer, Lecture Notes in Computer Science, Volume 9627 : 143 - 153, 2016.
12. †Eunjin Oh, Jean-Lou De Carufel and Hee-Kap Ahn. The 2-center problem in a simple polygon. International Symposium on Algorithms and Computation (ISAAC), Springer, Lecture Notes in Computer Science, Volume 9472 : 307 - 317, 2015.
13. †Nicolas Bonichon, Prosenjit Bose, Jean-Lou De Carufel, Ljubomir Perković and André van Renssen. Upper and Lower Bounds for Online Routing on Delaunay Triangulations. European Symposium on Algorithms (ESA), 203 - 214, 2015.
14. †Prosenjit Bose, Jean-Lou De Carufel, Michael Dobbins, Heuna Kim and Giovanni Viglietta. The Shadows of a Cycle Cannot All Be Paths. Canadian Conference on Computational Geometry (CCCG), 70 - 75, 2015.
15. †Prosenjit Bose, Jean-Lou De Carufel and André van Renssen. Constrained Empty-Rectangle Delaunay Graphs. Canadian Conference on Computational Geometry (CCCG), 57 - 62, 2015.
16. †Hee-Kap Ahn, Luis Barba, Prosenjit Bose, Jean-Lou De Carufel, Matias Korman and Eunjin Oh. A Linear-Time Algorithm for the Geodesic Center of a Simple Polygon. Symposium on Computational Geometry (SoCG), 209 - 223, 2015.
17. †Luis Barba, Prosenjit Bose, Jean-Lou De Carufel, Mirela Damian, Rolf Fagerberg, André van Renssen, Perouz Taslakian and Sander Verdonschot. Continuous Yao Graphs. Canadian Conference on Computational Geometry (CCCG), 100 - 106, 2014.
18. †Aritra Banik, Jean-Lou De Carufel, Anil Maheshwari and Michiel Smid. Voronoi Games and Epsilon Nets. Canadian Conference on Computational Geometry (CCCG), 142 - 147, 2014.
19. †Prosenjit Bose, Jean-Lou De Carufel, Stephane Durocher and Perouz Taslakian. Competitive Online Routing on Delaunay Triangulations. Scandinavian Symposium and Workshops on Algorithm Theory (SWAT), Springer, Lecture Notes in Computer Science, Volume 8503 : 98 - 109, 2014.
20. †Luis Barba, Otfried Cheong, Jean-Lou De Carufel, Michael Dobbins, Rudolf Fleischer, Akitoshi Kawamura, Matias Korman, Yoshio Okamoto, János Pach, Yuan Tang, Takeshi Tokuyama, Sander Verdonschot and Tianhao Wang. Weight Balancing on Boundaries and Skeletons. ACM Symposium on Computational Geometry (SoCG), 436 - 443, 2014.
21. †Prosenjit Bose, Jean-Lou De Carufel and Stephane Durocher. Revisiting the Problem of Searching on a Line. European Symposium on Algorithms (ESA), Springer, Lecture Notes in Computer Science, Volume 8125 : 205 - 216, 2013.
22. †Luis Barba, Prosenjit Bose, Jean-Lou De Carufel, André van Renssen and Sander Verdonschot. On the stretch factor of the Theta-4 graph. Algorithms and Data Structures Symposium (WADS), Springer, Lecture Notes in Computer Science, Volume 8037 : 109 - 120, 2013.
23. †Prosenjit Bose, Jean-Lou De Carufel, Carsten Grimm, Anil Maheshwari and Michiel Smid. Optimal Data Structures for Farthest-Point Queries in Cactus Networks. Canadian Conference on Computational Geometry (CCCG), 175 - 180, 2013.

24. †Prosenjit Bose, Jean-Lou De Carufel, Pat Morin, André van Renssen and Sander Verdonschot. Optimal Bounds on Theta-Graphs : More is not Always Better. Canadian Conference on Computational Geometry (CCCG), 291 - 296, 2012.
25. †Prosenjit Bose, Jean-Lou De Carufel, Carsten Grimm, Anil Maheshwari and Michiel Smid. On Farthest-Point Information in Networks. Canadian Conference on Computational Geometry (CCCG), 199 - 204, 2012.
26. Jean-Lou De Carufel and Robert Laganière. Matching Cylindrical Panorama Sequences using Planar Reprojections, Workshop on Omni-directional Vision, Camera Networks and Non-classical Cameras (OMNIVIS), held with International Conference on Computer Vision (ICCV), 320 - 327, 2011.
27. †Prosenjit Bose and Jean-Lou De Carufel. Isoperimetric Triangular Enclosure with a Fixed Angle. Canadian Conference on Computational Geometry (CCCG), 93 - 98, 2011.
28. †Jean-Lou De Carufel, Craig Dillabaugh and Anil Maheshwari. Point Location in Well-Shaped Meshes Using Jump-and-Walk. Canadian Conference on Computational Geometry (CCCG), 147 - 152, 2011.
29. †Prosenjit Bose and Jean-Lou De Carufel. Minimum Enclosing Area Triangle with a Fixed Angle. Canadian Conference on Computational Geometry (CCCG), 171 - 174, 2010.
30. Jean-Lou De Carufel and Jules Desharnais. On the Structure of Demonic Refinement Algebra With Enabledness and Termination. Relational Methods in Computer Science and Applications of Kleene Algebra (ReLMiCS/AKA), Springer, Lecture Notes in Computer Science, Volume 4988 : 69 - 83, 2008.
31. Jean-Lou De Carufel and Jules Desharnais. Latest News About Demonic Algebra with Domain. Relational Methods in Computer Science and Applications of Kleene Algebra (ReLMiCS/AKA), Springer, Lecture Notes in Computer Science, Volume 4988 : 54 - 68, 2008.
32. Jean-Lou De Carufel and Jules Desharnais. Demonic Algebra with Domain. Relational Methods in Computer Science and Applications of Kleene Algebra (ReLMiCS/AKA), Springer, Lecture Notes in Computer Science, Volume 4136 : 120 - 134, 2006.

Posters in Conferences with Program Committee

1. Jean-Lou De Carufel and Robert Laganière. Cylindrical Panorama Matching. International Computer Vision Summer School (ICVSS), 2011.