

# JOHN HOWAT

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Computational Geometry Lab  
5170 Herzberg Laboratories  
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Carleton University  
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## Education

- **Doctor of Philosophy** (in progress), Carleton University (2008–Present)  
Research Areas: Computational geometry, algorithms, data structures  
Supervisors: Prof. Prosenjit Bose, Prof. Pat Morin
- **Master of Computer Science**, Carleton University (2007–08)  
Research Areas: Computational geometry, algorithms, data structures  
Supervisors: Prof. Prosenjit Bose, Prof. Pat Morin
- **Bachelor of Computer Science (Honours)**, Carleton University (2003–07)  
Minor in Mathematics  
Senate Medal for Outstanding Academic Achievement

## Academic Experience

- **Contract Instructor**, Carleton University (2009–Present)  
Courses: COMP/MATH 1805 (Discrete Structures, Summer 2009), COMP/MATH 3804 (Design and Analysis of Algorithms I, Summer 2010, Summer 2011, Winter 2012)
- **Teaching Assistant**, Carleton University (2005–Present)  
Courses: COMP 1006 / 1406 (Design and Implementation of Computer Applications), COMP / MATH 1805 (Discrete Structures), COMP 2805 (Introduction to Theory of Computation), COMP/MATH 3804 (Design and Analysis of Algorithms I, COMP 4804 (Design and Analysis of Algorithms II)
- **Research Assistant**, Carleton University (2007–08)  
Research Areas: Computational geometry, algorithms, data structures  
Supervisors: Prof. P. Bose, Prof. P. Morin

## Scholarly Activities

- **Conferences:** Canadian Conference on Computational Geometry (CCCG) 2007, Ottawa. CCCG 2008, Montréal. International Symposium on Algorithms and Data Structures (WADS) 2009, Banff. CCCG 2010, Winnipeg.
- **Workshops:** Carleton Workshop on Discrete and Computational Geometry 2009, Gatineau. Carleton Workshop on Discrete and Computational Geometry 2010, Ottawa.
- **Program Committees:** Canadian Conference on Computational Geometry (CCCG) 2010, Winnipeg.

## Awards and Scholarships

- NSERC CGS-D3: \$35,000/a (2009–2012)
- NSERC CGS-M: \$17,500/a (2008), upgraded to PGS-D: \$21,000/a (2008–09)
- Ontario Graduate Scholarship (Declined): \$15,000/a (2008, 2009)
- Graduate Scholarship: \$5,000/a (2007–08), \$7,500/a (2008–12)
- Academic Excellence Scholarship: \$3,000/a (2007–08), \$6,000/a (2008–12)

## Publications

### Refereed Journals

- [1] Prosenjit Bose, John Howat, and Pat Morin. A distribution-sensitive dictionary with low space overhead. *Journal of Discrete Algorithms*, 10:140–145, 2012.
- [2] Prosenjit Bose, Karim Douïeb, Vida Dujmović, and John Howat. Layered working-set trees. *Algorithmica*, 63(1):476–489, 2012.
- [3] Vida Dujmović, John Howat, and Pat Morin. Biased range trees. *Algorithmica*, 62(1):21–37, 2012.

### Refereed Conferences with Proceedings

- [4] Prosenjit Bose, Karim Douïeb, Vida Dujmović, John Howat, and Pat Morin. Fast local searches and updates in bounded universes. In *Proceedings of the 22nd Canadian Conference on Computational Geometry (CCCG 2010)*, pages 261–264, 2010.
- [5] Prosenjit Bose, Karim Douïeb, Vida Dujmović, and John Howat. Layered working-set trees. In *Proceedings of the 9th Latin American Theoretical Informatics Symposium (LATIN 2010)*, LNCS 6034, pages 686–696, 2010.
- [6] Prosenjit Bose, John Howat, and Pat Morin. A distribution-sensitive dictionary with low space overhead. In *Proceedings of the 11th International Symposium on Algorithms and Data Structures (WADS 2009)*, LNCS 5664, pages 110–118, 2009.
- [7] Vida Dujmović, John Howat, and Pat Morin. Biased range trees. In *Proceedings of the 20th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA 2009)*, pages 486–495, 2009.

### Theses

- [8] John Howat. Two results on distribution-sensitive data structures. Master’s thesis, Carleton University, 2008.