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# Dr. Marc Moreno Maza

Correspondence language: English
Sex: Male
Date of Birth: 5/28

## Contact Information

The primary information is denoted by (*)

### Address

Primary Affiliation (*)

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# Dr. Marc Moreno Maza

## Language Skills

| Language | Read | Write | Speak | Understand | Peer Review |
|---|---|---|---|---|---|
| English | Yes | Yes | Yes | Yes | Yes |
| French | Yes | Yes | Yes | Yes | Yes |
| Spanish; Castilian | Yes | Yes | Yes | Yes | Yes |

## Degrees

Master's Thesis, Computer Science, Université de Paris VI (P & M Curie)

Master's Thesis, Mathematics, Université de Paris VI (P & M Curie)

Doctorate, PhD, Computer Science, Université de Paris VI (P & M Curie)

## Recognitions

2022/9 — Best Paper Award, International Workshop on OpenMP (IWOMP 2022)
Award received for the paper "Towards Automatic OpenMP-Aware Utilization of Fast GPU Memory" co-authored with Delaram Talaashrafi and Johannes Doerfert.

2017/7 — Distinguished Software Presentation Award, International Symposium on Symbolic and Algebraic Computation (ISSAC 2017) Kaiserslautern, Germany.
Presentation of the CUMODP library: A CUDA library for computations with polynomial systems over finite fields. This project is co-authored with my students Sardar Anisul Haque, Xin Li, Farnam Mansouri, Davood Mohajerani, Wei Pan and Ning Xie. Project web site: https://www.cumodp.org/index.html

2015/6 — Professorship Award under the Chinese Academy of Sciences President's International Fellowship Initiative for Visiting Scientists, 2015. - 132,000 (Chinese yuan)

2013/12 — UWO Teaching Honour Roll, University of Wetern Ontario, 2012-2013

2012/4 — Early Adopter Program Award, NSF/IEEE-TCPP Curriculum Initiative on Parallel and Distributed Computing, 2011.
I received this award for the undergraduate and graduate courses on patallel and distributed computing that I developed at the University of Western Ontario since 2006. For this award, I was invited at the IPDPS 2012 conference in Shanghai (China) and I delivered an invited talk at the NSF/TCPP Workshop on Parallel and Distributed Computing Education (EduPar).

| | |
|---|---|
| 2011/7 | Distinguished Software Presentation Award, International Symposium on Symbolic and Algebraic Computation (ISSAC 2011), San Jose, USA.<br>This award was given for a presentation of the RegularChains library in Maple with title "Computing the real solutions of polynomial systems with the RegularChains library in Maple.", co-authored with Changbo Chen, James H. Davenport, Francois Lemaire, Bican Xia, Rong Xiao and Yuzhen Xie. Presentation slides: https://www.csd.uwo.ca/~mmorenom/Publications/ISSAC_Software_Demo.Talk.pdf |
| 2010/6 | MITACS Award for Excellence in Mentorship, 2011.<br>Quoting the MITACS Award letter Letter "This award recognizes the outstanding achievements of academic supervisors." MITACS web site: https://www.mitacs.ca/ MITACS stands for: Mathematics of Information Technology and Complex Systems. |
| 2009/7 | Best Poster Award, International Symposium on Symbolic and Algebraic Computation (ISSAC 2002), Seoul, South Korea.<br>Title of the poster: “Balanced Polynomial Multiplication on Multicores” co-athored with Yuzhen Xie. |
| 2009/6 | MITACS Award for Best Novel Use of Mathematics in Technology Transfer, 2009.<br>Title of the awarded project “Toward high-performance computer algebra with Maple”, co-authored with my PhD students Xin Li and Wei Pan. MITACS web site: https://www.mitacs.ca/ MITACS stands for: Mathematics of Information Technology and Complex Systems. |
| 2005/7 | Best Poster Award, International Symposium on Symbolic and Algebraic Computation (ISSAC 2005), Beijing, China<br>Poster “On the complexity of the D5 Principle” co-authored with Xavier Dahan, Éric Schost, Wenyuan Wu and Yuzhen Xie. |
| 2005/7 | Distinguished Student Paper Award, International Symposium on Symbolic and Algebraic Computation (ISSAC 2005), Beijing, China<br>Award received by the student authors, Xavier Dahan, Wenyuan Wu and Yuhen Xie, that I co-supervised with Eric Schost, for the paper “Lifting techniques for triangular decompositions”. |

## User Profile

Researcher Status: Researcher

Research Specialization Keywords: Computer algebra, parallel computing

## Employment

| | |
|---|---|
| 2016/7 | Full Professor<br>Computer Science, University of Western Ontario<br>Full-time, Professor<br>Tenure Status: Tenure |
| 2016/7 - 2022/6 | Graduate Chair<br>University of Western Ontario<br>Full-time |
| 2008/7 - 2016/7 | Associate Professor<br>Computer Science, University of Western Ontario<br>Full-time, Associate Professor<br>Tenure Status: Tenure |

2002/7 - 2008/7 Assistant Professor
Computer Science, University of Western Ontario
Full-time, Assistant Professor
Tenure Status: Tenure Track

2001/9 - 2002/7 Maitre de conferences
Computer Science, Université de Lille I (Sci. & Tech.)
Full-time, Associate Professor
Tenure Status: Tenure

2000/9 - 2001/8 Maitre de conferences
Computer Science, Université de Lille I (Sci. & Tech.)
Full-time, Assistant Professor
Tenure Status: Tenure Track

1997/7 - 2000/8 Computational Mathematician
Symbolic Computation, The Numerical Algorithms Group Ltd
Full-time
Tenure Status: Non Tenure Track

## Research Funding History

**Awarded [n=1]**

2018/4 - 2024/3
Principal Applicant
NSERC Discovery, Grant, Operating
Project Description: Pushing the limits of computer algebra: From the integer resolution of polynomial systems to the computation of topological closures

**Funding Sources:**

2018/4 - 2024/3 Natural Sciences and Engineering Research Council of Canada (NSERC)
NSERC Discovery Grant
Total Funding - 246,000 (Canadian dollar)
Portion of Funding Received - 246,000 (Canadian dollar)
Funding Competitive?: Yes

**Completed [n=31]**

2022/5 - 2022/9
Principal Investigator
MITACS Accelerate Cluster, Grant, Operating
Project Description: Algorithmic and Software Progress in Symbolic Computation. Industrial partner : Maplesoft.

**Funding by Year:**

2022/5 - 2022/8 Total Funding - 45,000 (Canadian dollar)
Portion of Funding Received - 40,000 (Canadian dollar)

**Funding Sources:**

Waterloo Maple (Canadian dollar)
Funding Competitive?: Yes

Mathematics of Information Technology and Complex Systems (MITACS) (Canadian dollar)
Funding Competitive?: Yes

Co-investigator : David J. Jeffrey

2021/10 - 2022/2 MITACS Accelerate Cluster, Grant, Operating

Project Description: Effective Algorithms in Polyhedral Geometry and Symbolic Analysis. Industrial partner: Maplesoft.

**Funding by Year:**

2021/10 - 2022/2 Total Funding - 48,750
Portion of Funding Received - 48,750 (Canadian dollar)

**Funding Sources:**

Waterloo Maple (Canadian dollar)
Funding Competitive?: Yes

Mathematics of Information Technology and Complex Systems (MITACS) (Canadian dollar)
Funding Competitive?: Yes

2020/8 - 2020/11
Principal Investigator

MITACS Accelerate Cluster, Grant, Operating
Project Description: Algorithmic and Interface Advances in Computer Algebra. Partner organization: Maplesoft Inc.

**Funding Sources:**

Waterloo Maple
Total Funding - 49,000 (Canadian dollar)
Portion of Funding Received - 24,950 (Canadian dollar)
Funding Competitive?: Yes

Mathematics of Information Technology and Complex Systems (MITACS) (Canadian dollar)
Funding Competitive?: Yes

Co-investigator : David J. Jeffrey; Gregory Reid

2019/5 - 2020/4
Principal Investigator

IBM Center for Advanced Studies (CAS), Grant, Operating

**Funding Sources:**

IBM (CAS) Centre for Advances Studies
CAS
Total Funding - 24,000 (Canadian dollar)
Portion of Funding Received - 24,000 (Canadian dollar)
Funding Competitive?: Yes

2019/1 - 2019/12
Co-applicant

SEED grant towards an NSERC CRD application, Grant, Operating

**Funding Sources:**

University of Western Ontario
Seed grant
Total Funding - 25,000
Portion of Funding Received - 6,250 (Canadian dollar)
Funding Competitive?: Yes

Co-applicant : David J. Jeffrey; Gregory Reid;

Principal Applicant : Robert M. Corless

2016/12 - 2019/11
Principal Investigator

NSERC – Collaborative Research and Development (CRD), Grant, Operating
Project Description: Comprehensive Optimization of Parametric Kernels for Graphics Processing Units

**Funding by Year:**

2016/11 - 2019/12 Total Funding - 144,000
Portion of Funding Received - 144,000 (Canadian dollar)

**Funding Sources:**

Natural Sciences and Engineering Research Council of Canada (NSERC)
NSERC Collaborative and Research Development (Canadian dollar)
Funding Competitive?: Yes

IBM (CAS) Centre for Advances Studies
Funding Competitive?: Yes

2019/5 - 2019/8
Principal Investigator

Maplesoft contract, Contract
Project Description: Advances in Computer Algebra

**Funding Sources:**

Waterloo Maple
Total Funding - 19,800 (Canadian dollar)
Portion of Funding Received - 6,600 (Canadian dollar)
Funding Competitive?: Yes

Co-investigator : David J. Jeffrey; Gregory Reid

2018/5 - 2019/4
Principal Investigator

IBM Center for Advanced Studies (CAS), Grant, Operating

**Funding Sources:**

IBM (CAS) Centre for Advances Studies
CAS
Total Funding - 24,000 (Canadian dollar)
Portion of Funding Received - 24,000 (Canadian dollar)
Funding Competitive?: Yes

2017/5 - 2018/5
Principal Investigator

IBM Center for Advanced Studies (CAS), Grant, Operating

**Funding Sources:**

IBM (CAS) Centre for Advances Studies
CAS
Total Funding - 24,000
Portion of Funding Received - 24,000
Funding Competitive?: Yes

2013/4 - 2018/3
Principal Applicant

NSERC Discovery, Grant, Operating
Clinical Research Project?: No
Project Description: Hardware Acceleration Technologies Enabling Polynomial System Solving

**Funding Sources:**

Natural Sciences and Engineering Research Council of Canada (NSERC)
NSERC Discovery Grant
Total Funding - 100,000
Portion of Funding Received - 100,000
Funding Competitive?: Yes

2016/6 - 2017/6
Principal Applicant

IBM Center for Advanced Studies (CAS), Grant, Operating

**Funding Sources:**

IBM (CAS) Centre for Advances Studies
CAS
Total Funding - 24,000
Portion of Funding Received - 24,000
Funding Competitive?: Yes

2015/6 - 2016/6
Principal Applicant

IBM Center for Advanced Studies (CAS), Grant, Operating

**Funding Sources:**

IBM (CAS) Centre for Advances Studies
CAS
Total Funding - 30,000
Portion of Funding Received - 30,000
Funding Competitive?: Yes

2015/7 - 2015/11
Principal Applicant

Chinese Academy of Science Fellowship, Fellowship

**Funding Sources:**

Chinese Academy of Sciences (The)
Fellowship
Total Funding - 26,400 (Canadian dollar)
Portion of Funding Received - 26,400 (Canadian dollar)
Funding Competitive?: Yes

2014/6 - 2015/6
Principal Applicant

IBM Center for Advanced Studies (CAS), Grant, Operating

**Funding Sources:**

IBM (CAS) Centre for Advances Studies
CAS
Total Funding - 26,000
Portion of Funding Received - 26,000
Funding Competitive?: Yes

2013/6 - 2014/6
Principal Applicant

MITACS Accelerate Cluster, Grant, Operating
Project Description: Computer Algebra and High-Performance Computing Support for Model Predictive Control.

**Funding by Year:**

2013/7 - 2014/6 Total Funding - 102,000 (Canadian dollar)
Portion of Funding Received - 102,000 (Canadian dollar)

**Funding Sources:**

Waterloo Maple
Funding Competitive?: Yes

Mathematics of Information Technology and Complex Systems (MITACS) (Canadian dollar)
Funding Competitive?: Yes

2012/9 - 2013/4
Principal Applicant

MITACS Accelerate, Grant, Operating

**Funding by Year:**

2012/9 - 2013/4 Total Funding - 25,000 (Canadian dollar)
Portion of Funding Received - 25,000 (Canadian dollar)

**Funding Sources:**

Waterloo Maple (Canadian dollar)
Funding Competitive?: Yes

Mathematics of Information Technology and Complex Systems (MITACS)
MITACS Accelerate
Funding Competitive?: Yes

2008/4 - 2013/3
Principal Applicant

NSERC Discovery, Grant, Operating
Project Description: High Performance Computer Algebra and Applications

**Funding Sources:**

Natural Sciences and Engineering Research Council of Canada (NSERC)
Discovery
Total Funding - 135,000 (Canadian dollar)
Portion of Funding Received - 135,000 (Canadian dollar)
Funding Competitive?: Yes

2010/11 - 2012/11
Principal Applicant

MITACS Elevate Cluster, Grant, Operating

**Funding Sources:**

Waterloo Maple (Canadian dollar)
Funding Competitive?: Yes

Mathematics of Information Technology and Complex Systems (MITACS)
Elevate
Total Funding - 140,000
Portion of Funding Received - 140,000
Funding Competitive?: Yes

2011/5 - 2012/4
Principal Applicant

MITACS Elevate, Grant, Operating
Project Description: Cache-oblivious and adaptive algorithms in symbolic computation

**Funding by Year:**

2011/5 - 2012/4 Total Funding - 55,000 (Canadian dollar)
Portion of Funding Received - 55,000 (Canadian dollar)

**Funding Sources:**

Mathematics of Information Technology and Complex Systems (MITACS)
MITACS Elevate
Funding Competitive?: Yes

Waterloo Maple
Funding Competitive?: Yes

Co-investigator : I. Kotsireas

2011/5 - 2012/4
Principal Applicant

ADF Major Grant, Grant, Operating

**Funding Sources:**

University of Western Ontario
Academic Development Fund (ADF)
Total Funding - 50,000 (Canadian dollar)
Portion of Funding Received - 50,000 (Canadian dollar)
Funding Competitive?: Yes

Co-investigator : P. Yu; R.M. Corless

2010/4 - 2011/3
Principal Applicant

NSERC RTI, Grant, Equipment

**Funding Sources:**

Natural Sciences and Engineering Research Council of Canada (NSERC)
RTI
Total Funding - 150,000 (Canadian dollar)
Portion of Funding Received - 150,000 (Canadian dollar)
Funding Competitive?: Yes

Co-investigator : E. Schost; R. E. Mercer

2009/4 - 2011/3
Co-applicant

MITACS Full Project, Grant, Operating
Project Description: Mathematics of Computer Algebra and Analysis (MOCAA). This project had 19 co-applicants .

**Funding by Year:**

2009/4 - 2011/3 Total Funding - 420,000 (Canadian dollar)
Portion of Funding Received - 12,500 (Canadian dollar)

**Funding Sources:**

Mathematics of Information Technology and Complex Systems (MITACS)
MITACS Full Project
Funding Competitive?: Yes

Waterloo Maple

Principal Applicant : George Labahn; Michael B. Monagan

2009/1 - 2011/1
Principal Applicant

SHARCNET Graduate Fellowship, Fellowship

**Funding Sources:**

SHARCNET
Graduate Fellowship
Total Funding - 26,000
Portion of Funding Received - 26,000
Funding Competitive?: Yes

2009/4 - 2010/3
Co-applicant

Web site of the project " Mathematics of Computer Algebra and Analysis (MOCAA)"., Grant, Operating

**Funding Sources:**

Mathematics of Information Technology and Complex Systems (MITACS)
Total Funding - 5,000 (Canadian dollar)
Portion of Funding Received - 5,000 (Canadian dollar)
Funding Competitive?: Yes

Principal Applicant : Michael B. Monagan

2007/4 - 2009/3
Co-applicant

MITACS Full Project, Grant, Operating
Project Description: Mathematics of Computer Algebra and Analysis (MOCAA). This project had 19 co-applicants.

**Funding by Year:**

2007/4 - 2009/3 Total Funding - 473,000 (Canadian dollar)
Portion of Funding Received - 11,825 (Canadian dollar)

**Funding Sources:**

Mathematics of Information Technology and Complex Systems (MITACS) (Canadian dollar)

Waterloo Maple (Canadian dollar)

Co-applicant : George Labahn; Michael B. Monagan

2008/4 - 2008/5
Co-applicant

Workshop for the project "Mathematics of Computer Algebra and Analysis "(MOCAA), Grant, Workshop

**Funding Sources:**

Mathematics of Information Technology and Complex Systems (MITACS)
Total Funding - 6,000 (Canadian dollar)
Portion of Funding Received - 3,000 (Canadian dollar)
Funding Competitive?: Yes

Principal Applicant : Michael B. Monagan

2003/4 - 2008/3
Principal Applicant

NSERC Discovery, Grant, Operating

**Funding by Year:**

2003/4 - 2008/3 Total Funding - 12,000 (Canadian dollar)
Portion of Funding Received - 120,000 (Canadian dollar)

2006/9 - 2007/8
Co-applicant

Workshops "Symbolic-Numeric Computation" (SNC 2007) and "Parallel Symbolic Computation" (PASCO 2007), Grant, Workshop

**Funding Sources:**

Fields Institute for Research in Mathematical Sciences (The)
Total Funding - 6,000 (Canadian dollar)
Portion of Funding Received - 3,000 (Canadian dollar)
Funding Competitive?: Yes

Mathematics of Information Technology and Complex Systems (MITACS)
Total Funding - 6,000 (Canadian dollar)
Portion of Funding Received - 3,000 (Canadian dollar)
Funding Competitive?: Yes

Co-applicant : Stephen M. Watt

2002/9 - 2007/8
Co-applicant

NSERC Strategic Project, Grant, Operating

**Funding Sources:**

Microsoft Corporation (Canadian dollar)
Funding Competitive?: Yes

Natural Sciences and Engineering Research Council of Canada (NSERC)
Total Funding - 651,520
Portion of Funding Received - 162,880 (Canadian dollar)
Funding Competitive?: Yes

Co-applicant : Mark G. Giesbrecht;

Principal Applicant : Stephen M. Watt

2005/4 - 2007/3
Co-applicant

MITACS Full Project, Grant, Operating

Project Description: Mathematics of Computer Algebra and Analysis (MOCAA). This project had 19 co-applicants.

**Funding by Year:**

2005/4 - 2007/3
Total Funding - 213,000 (Canadian dollar)
Portion of Funding Received - 5,525 (Canadian dollar)

**Funding Sources:**

Waterloo Maple
Funding Competitive?: Yes

Mathematics of Information Technology and Complex Systems (MITACS)
Funding Competitive?: Yes

Principal Applicant : Peter Borwein

2003/4 - 2005/3
Co-applicant
MITACS Full Project, Grant, Operating
Project Description: Mathematics of Computer Algebra and Analysis (MOCAA). This project had 19 co-applicants. Project web site: http://www.cecm.sfu.ca/~pborwein/MITACS/

**Funding Sources:**

Mathematics of Information Technology and Complex Systems (MITACS)
Full Project
Total Funding - 400,000 (Canadian dollar)
Portion of Funding Received - 10,000 (Canadian dollar)
Funding Competitive?: Yes

Waterloo Maple
Total Funding - 254,000 (Canadian dollar)
Portion of Funding Received - 12,700 (Canadian dollar)
Funding Competitive?: Yes

Principal Applicant : Peter Borwein

## Courses Taught

2021/05/01 - 2021/06/30
Instructor, Computer Science, University of Western Ontario
Course Title: CS 9646 - Algorithms for Multivariate Power Series and their application to Symbolic analysis
Course Code: CS9646
Course Topic: Computer Algebra
Course Level: Graduate
Academic Session: Summer
Lecture Hours Per Week: 3
Tutorial Hours Per Week: 0
Lab Hours Per Week: 0
Guest Lecture?: No

2020/09/01 - 2020/12/31
Instructor, Computer Science, University of Western Ontario
Course Title: CS 2214A: Discrete Structures for Computing
Course Code: CS2214
Course Topic: Discrete Mathematics
Course Level: Undergraduate
Academic Session: Fall
Lecture Hours Per Week: 3
Tutorial Hours Per Week: 1
Lab Hours Per Week: 0
Guest Lecture?: No

2020/01/01 - 2020/04/30
Instructor, Computer Science, University of Western Ontario
Course Title: CS 9867B - Algorithmic Properties of Polynomial Rings
Course Code: CS 9867
Course Topic: Computer Algebra
Course Level: Graduate
Academic Session: Winter
Lecture Hours Per Week: 3
Tutorial Hours Per Week: 0
Lab Hours Per Week: 0
Guest Lecture?: No

2019/09/01 - 2019/12/31
Instructor, Computer Science, University of Western Ontario
Course Title: CS 2214A: Discrete Structures for Computing
Course Code: CS2214
Course Topic: Discrete Mathematics
Course Level: Undergraduate
Academic Session: Fall
Lecture Hours Per Week: 3
Tutorial Hours Per Week: 1
Lab Hours Per Week: 0
Guest Lecture?: No

2019/09/01 - 2019/12/31
Instructor, Computer Science, University of Western Ontario
Course Title: CS 9635A and CS 4402A - Distributed and Parallel Systems
Course Code: CS9635 - CS4402
Course Topic: Parallel Computing
Course Level: Graduate
Academic Session: Fall
Lecture Hours Per Week: 3
Tutorial Hours Per Week: 0
Lab Hours Per Week: 0
Guest Lecture?: No

2019/01/01 - 2019/04/30
Instructor, Computer Science, University of Western Ontario
Course Title: CS 2214B: Discrete Structures for Computing
Course Code: CS2214
Course Topic: Discrete Mathematics
Course Level: Undergraduate
Academic Session: Winter
Lecture Hours Per Week: 3
Tutorial Hours Per Week: 1
Lab Hours Per Week: 0
Guest Lecture?: No

2018/01/01 - 2018/04/30
Instructor, Computer Science, University of Western Ontario
Course Title: CS 3350B - Computer Architecture
Course Code: CS3350
Course Topic: Computer Architecture
Course Level: Undergraduate
Academic Session: Winter
Lecture Hours Per Week: 3
Tutorial Hours Per Week: 0
Lab Hours Per Week: 0
Guest Lecture?: No

2018/01/01 - 2018/04/30
Instructor, Computer Science, University of Western Ontario
Course Title: CS 9635B and CS 4402B - Distributed and Parallel Systems
Course Code: CS9635 - CS4402
Course Topic: Parallel Computing
Course Level: Undergraduate
Academic Session: Winter
Lecture Hours Per Week: 3
Tutorial Hours Per Week: 0
Lab Hours Per Week: 0
Guest Lecture?: No

2017/09/01 - 2017/12/31
Instructor, Computer Science, University of Western Ontario
Course Title: CS 2209A: Applied Logic for Computer Science
Course Code: CS2209
Course Topic: Logic for computer science
Course Level: Undergraduate
Academic Session: Fall
Lecture Hours Per Week: 3
Tutorial Hours Per Week: 1
Lab Hours Per Week: 0
Guest Lecture?: No

2017/09/01 - 2017/12/31
Instructor, Computer Science, University of Western Ontario
Course Title: CS 9652A - Algorithms and software for symbolic solvers of polynomial systems
Course Code: CS9652
Course Topic: Computer Algebra
Course Level: Graduate
Academic Session: Fall
Lecture Hours Per Week: 3
Tutorial Hours Per Week: 0
Lab Hours Per Week: 0
Guest Lecture?: No

2017/01/01 - 2017/04/30
Instructor, Computer Science, University of Western Ontario
Course Title: CS 3350B - Computer Architecture
Course Code: CS3350
Course Topic: Computer Architecture
Course Level: Undergraduate
Academic Session: Winter
Lecture Hours Per Week: 3
Tutorial Hours Per Week: 0
Lab Hours Per Week: 0
Guest Lecture?: No

2017/01/01 - 2017/04/30
Instructor, Computer Science, University of Western Ontario
Course Title: CS 9535B and CS 4402B - Distributed and Parallel Systems
Course Code: CS9635 - CS4402
Course Topic: Parallel Computing
Course Level: Graduate
Academic Session: Winter
Lecture Hours Per Week: 3
Tutorial Hours Per Week: 0
Lab Hours Per Week: 0
Guest Lecture?: No

2015/01/01 - 2015/04/30
Instructor, Computer Science, University of Western Ontario
Course Title: CS 3350B - Computer Architecture
Course Code: CS3350
Course Topic: Computer Architecture
Course Level: Undergraduate
Academic Session: Winter
Lecture Hours Per Week: 3
Tutorial Hours Per Week: 0
Lab Hours Per Week: 0
Guest Lecture?: No

2015/01/01 - 2015/04/30
Instructor, Computer Science, University of Western Ontario
Course Title: CS 9535B and CS 4402B - Distributed and Parallel Systems
Course Code: CS9635 - CS4402
Course Topic: Parallel Computing
Course Level: Graduate
Academic Session: Winter
Lecture Hours Per Week: 3
Tutorial Hours Per Week: 0
Lab Hours Per Week: 0
Guest Lecture?: No

2015/01/01 - 2015/04/30
Instructor, Computer Science, University of Western Ontario
Course Title: CS 3101B - Theory and Practice of High-performance Computing
Course Code: CS3101
Course Topic: Parallel Computing
Course Level: Undergraduate
Academic Session: Winter
Lecture Hours Per Week: 3
Tutorial Hours Per Week: 1
Lab Hours Per Week: 0
Guest Lecture?: No

2014/09/01 - 2014/12/31
Instructor, Computer Science, University of Western Ontario
Course Title: CS 2101A - Foundations of Programming for High Performance Computing
Course Code: CS2101
Course Topic: Parallel Computing
Course Level: Undergraduate
Academic Session: Fall
Lecture Hours Per Week: 3
Tutorial Hours Per Week: 1
Lab Hours Per Week: 1
Guest Lecture?: No

2014/01/01 - 2014/04/30
Instructor, Computer Science, University of Western Ontario
Course Title: CS 3101B - Theory of High-performance Computing
Course Code: CS3101
Course Topic: Parallel Computing
Course Level: Undergraduate
Academic Session: Winter
Lecture Hours Per Week: 3
Tutorial Hours Per Week: 1
Lab Hours Per Week: 0
Guest Lecture?: No

2014/01/01 - 2014/04/30
Instructor, Computer Science, University of Western Ontario
Course Title: CS 9535 and CS 4402B - Distributed and Parallel Systems
Course Code: CS9635 - CS4402
Course Topic: Parallel Computing
Course Level: Graduate
Academic Session: Winter
Lecture Hours Per Week: 3
Tutorial Hours Per Week: 0
Lab Hours Per Week: 0
Guest Lecture?: No

2013/09/01 - 2013/12/31
Instructor, Computer Science, University of Western Ontario
Course Title: CS 2101A - Foundations of Programming for High Performance Computing
Course Code: CS2101
Course Topic: Parallel Computing
Course Level: Undergraduate
Academic Session: Fall
Lecture Hours Per Week: 3
Tutorial Hours Per Week: 1
Lab Hours Per Week: 1
Guest Lecture?: No

2013/01/01 - 2013/04/30
Instructor, Computer Science, University of Western Ontario
Course Title: CS 3101B - Theory of High-performance Computing
Course Code: CS3101
Course Topic: Parallel Computing
Course Level: Undergraduate
Academic Session: Winter
Lecture Hours Per Week: 3
Tutorial Hours Per Week: 1
Lab Hours Per Week: 0
Guest Lecture?: No

2013/01/01 - 2013/04/30
Instructor, Computer Science, University of Western Ontario
Course Title: CS 9535 and CS 4402B - Distributed and Parallel Systems
Course Code: CS9635 - CS4402
Course Topic: Parallel Computing
Course Level: Graduate
Academic Session: Winter
Lecture Hours Per Week: 3
Tutorial Hours Per Week: 0
Lab Hours Per Week: 0
Guest Lecture?: No

| | |
|---|---|
| 2012/09/01 - 2012/12/31 | Instructor, Computer Science, University of Western Ontario<br>Course Title: CS 2101A - Foundations of Programming for High Performance Computing<br>Course Code: CS2101<br>Course Topic: Parallel Computing<br>Course Level: Undergraduate<br>Academic Session: Fall<br>Lecture Hours Per Week: 3<br>Tutorial Hours Per Week: 1<br>Lab Hours Per Week: 1<br>Guest Lecture?: No |
| 2012/01/02 - 2012/04/30 | Instructor, Computer Science, University of Western Ontario<br>Course Title: CS 9535 and CS 4402B- Distributed and Parallel Systems<br>Course Code: CS9635 - CS4402<br>Course Topic: Parallel Computing<br>Course Level: Graduate<br>Academic Session: Winter<br>Lecture Hours Per Week: 3<br>Tutorial Hours Per Week: 0<br>Lab Hours Per Week: 0<br>Guest Lecture?: No |
| 2012/01/01 - 2012/04/30 | Instructor, Computer Science, University of Western Ontario<br>Course Title: CS 2101B - Foundations of Programming for High Performance Computing<br>Course Code: CS2101<br>Course Topic: Parallel Computing<br>Course Level: Undergraduate<br>Academic Session: Winter<br>Lecture Hours Per Week: 3<br>Tutorial Hours Per Week: 1<br>Lab Hours Per Week: 1<br>Guest Lecture?: No |

## Student/Postdoctoral Supervision

**Master’s non-Thesis [n=2]**

| | |
|---|---|
| 2016/9 - 2017/12<br>Principal Supervisor | Haoze Yuan (Completed) , University of Western Ontarioo<br>Degree Name: PhD<br>Specialization: Computer Science<br>Student Degree Received Date: 2017/12<br>Thesis/Project Title: Multithreaded algorithms for integer programming on graphics processing units<br>Present Position: Graduate Student, University of Western Ontarioo |
| 2016/9 - 2017/12<br>Principal Supervisor | Yiming Guan (Completed) , The University of Western Ontario<br>Student Degree Received Date: 2017/12<br>Thesis/Project Title: Cache-oblivious algorithm for Fourier-Motzkin elimination<br>Present Position: Software Engineer, Mycionics Inc., Canada |

**Master's Thesis [n=25]**

2022/9 - 2023/12
Principal Supervisor

Yuzhuo Lei (In Progress) , Western University
Specialization: Computer Science
Student Degree Expected Date: 2023/12
Thesis/Project Title: Using Dixon resultants for computing triangular decompositions of polynomial systems
Present Position: Graduate Student, University of Western Ontario

2022/9 - 2023/12
Principal Supervisor

Hamid Fathi (In Progress) , Western University
Specialization: Computer Science
Student Degree Expected Date: 2023/12
Thesis/Project Title: Relaxed algorithms for multivariate power series in the BPAS library
Present Position: Graduate Student, University of Western Ontario

2021/9 - 2023/4
Principal Supervisor

Taabish Jeshani (In Progress) , Western University
Specialization: Computer Science
Student Degree Expected Date: 2023/4
Thesis/Project Title: Dynamically Finding Optimal Kernel Launch Parameters Targeting CUDA Programs
Present Position: Graduate Student, University of Western Ontario

2020/9 - 2022/4
Principal Supervisor

Juan-Pablo Gonzalez Trochez (Completed) , The University of Western Ontario
Degree Name: PhD
Specialization: Computer Science
Student Degree Start Date: 2020/9
Student Degree Received Date: 2022/4
Thesis/Project Title: Algorithms for Regular Chains of Dimension One
Project Description: https://ir.lib.uwo.ca/etd/8530/
Present Position: Graduate student, University of Western Ontarioo

2020/9 - 2022/4
Principal Supervisor

Ryan Sandford (Completed) , The University of Western Ontario
Student Degree Start Date: 2020/9
Student Degree Received Date: 2022/4
Thesis/Project Title: Towards a Generalization of Fulton's Intersection Multiplicity Algorithm
Project Description: https://ir.lib.uwo.ca/etd/8506
Present Position: Software Engineer, Amazon Web Services (AWS)

2019/9 - 2021/8
Principal Supervisor

Peter Valovcik (Withdrawn) , The University of Western Ontario
Student Degree Start Date: 2019/9
Thesis/Project Title: Multithreaded Algorithms for Rational Function Arithmetic
Present Position: Unknown

2018/9 - 2020/8
Principal Supervisor

Mahsa Kazemi (Completed) , The University of Western Ontario
Student Degree Start Date: 2017/9
Student Degree Received Date: 2020/8
Thesis/Project Title: An Implementation of Power Series in the BPAS Library
Project Description: https://ir.lib.uwo.ca/etd/7094
Present Position: Senior Consultant, CIBC

2017/9 - 2018/8
Principal Supervisor

Alexander Brandt (Completed) , University of Western Ontarioo
Specialization: Computer Science
Student Degree Received Date: 2018/8
Thesis/Project Title: High Performance Sparse Multivariate Polynomials: Fundamental Data Structures and Algorithms
Project Description: https://ir.lib.uwo.ca/etd/5593
Present Position: Lecturer, University of Western Ontarioo

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| 2017/9 - 2020/8<br>Principal Supervisor | Colin Costello (Completed) , University of Western Ontarioo<br>Student Degree Received Date: 2020/8<br>Thesis/Project Title: A Generic Implementation of Fast Fourier Transforms for the BPAS Library<br>Project Description: https://ir.lib.uwo.ca/etd/7306<br>Present Position: Software Engineer, MDA Robotics & Space Operations |
| 2017/9 - 2018/12<br>Principal Supervisor | Delaram TalaAshrafi (Completed) , University of Western Ontarioo<br>Student Degree Received Date: 2018/12<br>Thesis/Project Title: Complexity Results for Fourier-Motzkin Elimination<br>Project Description: https://ir.lib.uwo.ca/etd/5981<br>Present Position: Software Engineer |
| 2017/9 - 2020/12<br>Principal Supervisor | Amha Tsegaye (Completed) , University of Western Ontarioo<br>Student Degree Start Date: 2017/9<br>Student Degree Received Date: 2020/12<br>Thesis/Project Title: Applying Front End Compiler Process to Parse Polynomials in Parallel<br>Project Description: https://ir.lib.uwo.ca/etd/7592<br>Present Position: Logistician, Walmart |
| 2016/9 - 2018/4<br>Principal Supervisor | Linxiao Wang (Completed) , University of Western Ontarioo<br>Student Degree Received Date: 2018/4<br>Thesis/Project Title: Putting Fürer's Algorithm into Practice with the BPAS Library<br>Project Description: https://ir.lib.uwo.ca/etd/5358<br>Present Position: Software Engineer, Huawei Technologies Canada Co., Ltd. |
| 2016/9 - 2017/12<br>Principal Supervisor | Masoud Ataei (Completed) , The University of Western Ontario<br>Student Degree Received Date: 2017/12<br>Thesis/Project Title: On the Extended Hensel Construction and its Application to the Computation of Real Limit Points<br>Project Description: https://ir.lib.uwo.ca/etd/5127<br>Present Position: Software Engineer, IBM Canada |
| 2015/9 - 2016/12<br>Principal Supervisor | Davood Mohajerani (Completed) , The University of Western Ontario<br>Student Degree Received Date: 2016/12<br>Thesis/Project Title: Fast Fourier Transforms over Prime Fields of Large Characteristic and their Implementation on Graphics Processing Units<br>Project Description: https://ir.lib.uwo.ca/etd/4365<br>Present Position: Software Developer |
| 2014/9 - 2015/9<br>Principal Supervisor | Li Zhang (Completed) , Western University<br>Student Degree Received Date: 2015/9<br>Thesis/Project Title: Implementation techniques for the truncated Fourier transform<br>Project Description: https://ir.lib.uwo.ca/etd/3287<br>Present Position: Senior Data Scientist, RBC Royal Bank Of Canada |
| 2013/1 - 2014/4<br>Principal Supervisor | Farnam Mansouri (Completed) , Western University<br>Thesis/Project Title: On the parallelization of integer polynomial multiplication<br>Project Description: https://ir.lib.uwo.ca/etd/2039<br>Present Position: Software Engineer, DoorDash , San Francisco, USA |
| 2012/9 - 2013/12<br>Principal Supervisor | Sushek Shekar (Completed) , Western University<br>Thesis/Project Title: On the Interoperability of Programming Languages based on the Fork-Join Parallelism Model<br>Project Description: https://ir.lib.uwo.ca/etd/1848<br>Present Position: Embedded Software Designer, Cisco, Canada |

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| 2012/9 - 2014/8<br>Co-Supervisor | Svyatoslav Covanov (Completed) , Ecole Polytechnique (France) and Western University<br>Thesis/Project Title: Putting Furer's Algorithm into Practice<br>Present Position: Software Engineer, Zhor-Tech, a company based in Nancy, France. |
| 2010/9 - 2011/12<br>Principal Supervisor | Md Mohsin Ali (Completed) , Western University<br>Thesis/Project Title: On the Factor Refinement Principle and it's Implementation on Multicore Architectures<br>Project Description: https://ir.lib.uwo.ca/digitizedtheses/3462<br>Present Position: Staff Scientist, National Computational Infrastructure, The Australian National University |
| 2010/9 - 2012/4<br>Principal Supervisor | Zunaid Haque (Completed) , Western University<br>Thesis/Project Title: Multi-threaded real root isolation on multi-core architectures<br>Project Description: https://www.csd.uwo.ca/~mmorenom/Publications/Zunaid.Haque-MasterThesis-2012.pdf<br>Present Position: QA Analyst, Manulife, Toronto, ON |
| 2008/9 - 2010/8<br>Principal Supervisor | Liyun Li (Completed) , Western University<br>Thesis/Project Title: Efficient Evaluation of Large Polynomials<br>Project Description: https://www.csd.uwo.ca/~mmorenom/Publications/Liyun.Li-MasterThesis-2010.pdf<br>Present Position: Full Stack Web Developer, OANDA, San Francisco, California |
| 2006/9 - 2007/8<br>Principal Supervisor | Raqeeb Rasheed (Completed) , Western University<br>Specialization: Mathematics<br>Student Degree Received Date: 2007/8<br>Thesis/Project Title: Modular Methods for Solving Nonlinear Polynomial Systems.<br>Project Description: https://www.csd.uwo.ca/~mmorenom/Publications/Raqeeb.Rasheed.MSThesis-2007.pdf<br>Present Position: Graduate Student, University of Manitoba |
| 2005/5 - 2006/3<br>Principal Supervisor | Akpodigha Filatei (Completed) , Western University<br>Student Degree Received Date: 2006/3<br>Thesis/Project Title: Implementation of Fast Polynomial Arithmetic in Aldor.<br>Project Description: http://www.csd.uwo.ca/~moreno//Publications/AkpodighaFilatei-MasterThesis-2006.ps<br>Present Position: Technical Adviser, Torama |
| 2004/5 - 2005/8<br>Principal Supervisor | Xin Li (Completed) , Western University<br>Student Degree Received Date: 2005/8<br>Thesis/Project Title: Efficient management of symbolic computations in compiled and interpreted environments<br>Project Description: https://www.csd.uwo.ca/~mmorenom/Publications/XinLi-MSThesis-2005.pdf<br>Present Position: Software Engineer |
| 2003/5 - 2004/8<br>Principal Supervisor | Jinlong Cai (Completed) , Western University<br>Student Degree Received Date: 2004/8<br>Thesis/Project Title: Unified functional closures extending the Aldor development environment and supporting its interactive debugger<br>Project Description: https://www.csd.uwo.ca/~mmorenom/Publications/JinlongCai-MSThesis-2004.pdf<br>Present Position: Software Engineer, Amazon Web Services (AWS) |

**Doctorate [n=22]**

2022/5 - 2026/4
Principal Supervisor
Juan Pablo Gonzalez Trochez (In Progress) , Western University
Specialization: Computer Science
Student Degree Expected Date: 2026/4
Thesis/Project Title: Modular methods for triangular decompositions of polynomial systems
Present Position: Graduate Student, University of Western Ontario

2020/9 - 2024/8
Principal Supervisor
Haoze Yuan (In Progress) , The University of Western Ontario
Degree Name: PhD
Specialization: Computer Science
Student Degree Start Date: 2020/9
Student Degree Expected Date: 2024/8
Thesis/Project Title: Data Reshaping in Algebraic Computations
Present Position: Graduate student, University of Western Ontarioo

2019/1 - 2022/12
Principal Supervisor
Delaram TalaAshrafi (Completed) , The University of Western Ontario
Student Degree Start Date: 2018/1
Student Degree Received Date: 2022/12
Thesis/Project Title: Advances in the Automatic Detection of Optimization Opportunities in Computer Programs
Project Description: https://ir.lib.uwo.ca/etd/9054
Present Position: Software Engineer

2018/9 - 2022/8
Principal Supervisor
Alexander Brandt (Completed) , The University of Western Ontario
Specialization: Computer Science
Student Degree Start Date: 2018/9
Student Degree Received Date: 2022/8
Thesis/Project Title: The Design & Implementation of an Open-Source High-Performance Polynomial System Solver
Project Description: https://ir.lib.uwo.ca/etd/8733
Present Position: Lecturer, University of Western Ontario

2017/9 - 2023/8
Principal Supervisor
Mehdi Samadieh (In Progress) , University of Western Ontarioo
Student Degree Expected Date: 2023/8
Thesis/Project Title: Algebraic factorization over direct products of fields: An adaptation of Trager's algorithm
Present Position: PhD graduate student, University of Western Ontarioo

2017/9 - 2021/11
Principal Supervisor
Mohammadali Asadi (Completed) , University of Western Ontarioo
Student Degree Received Date: 2021/11
Thesis/Project Title: Cache-Friendly, Modular and Parallel Schemes For Computing Subresultant Chains
Project Description: https://ir.lib.uwo.ca/etd/8205
Present Position: Quantum Software Developer II, Xanadu

2017/5 - 2022/12
Principal Supervisor
Lin-Xiao Wang (Completed) , The University of Western Ontario
Student Degree Received Date: 2022/12
Thesis/Project Title: Three Contributions to the Theory and Practice of Optimizing Compilers
Project Description: https://ir.lib.uwo.ca/etd/8985
Present Position: Software Engineer, Huawei Technologies Canada Co., Ltd.

2017/1 - 2021/3
Principal Supervisor
Davood Mohajerani (Completed) , The University of Western Ontario
Student Degree Received Date: 2021/3
Thesis/Project Title: Parallel Arbitrary-precision Integer Arithmetic
Project Description: https://ir.lib.uwo.ca/etd/7674
Present Position: Software Developer

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| 2016/9 - 2017/12<br>Co-Supervisor | Rui-Juan Jing (Completed) , Chinese Academy of Sciences & University of Western Ontario<br>Student Degree Received Date: 2017/12<br>Thesis/Project Title: Computing Integer Points of Polyhedral Sets<br>Present Position: Assistant Professor, Jiangsu University , China |
| 2016/1 - 2017/10<br>Co-Supervisor | Egor Chesakov (Withdrawn) , The University of Western Ontario<br>Thesis/Project Title: Vascular Tree Structure: Fast Curvature Regularization and Validation<br>Present Position: research engineer, Microsoft, Redmond, USA |
| 2015/9 - 2017/12<br>Academic Advisor | Mahsa Kazemi (Completed) , Ispahan University of Technology & University of Western Ontario<br>Student Degree Start Date: 2017/12<br>Thesis/Project Title: Theory and implementation for local bifurcations analysis of smooth maps<br>Present Position: Senior Consultant, CIBC |
| 2014/9 - 2019/4<br>Co-Supervisor | Steven Thorton (Completed) , The University of Western Ontario<br>Student Degree Received Date: 2019/4<br>Thesis/Project Title: Algorithms for Bohemian Matrices<br>Project Description: https://ir.lib.uwo.ca/etd/6069<br>Present Position: Data Scientist, RN Financial Corporation |
| 2013/9 - 2018/1<br>Co-Supervisor | Robert H. C. Moir (Completed) , University of Western Ontarioo<br>Student Degree Received Date: 2018/1<br>Thesis/Project Title: Feasible Computation in Symbolic and Numeric Integration<br>Project Description: https://ir.lib.uwo.ca/etd/5155<br>Present Position: Chief Science Officer, Earth64, Toronto, Canada |
| 2012/9 - 2017/3<br>Principal Supervisor | Xiaohui Chen (Completed) , Western University<br>Student Degree Received Date: 2017/3<br>Thesis/Project Title: MetaFork: A Compilation framework for concurrency models targeting hardware accelerators<br>Project Description: https://ir.lib.uwo.ca/etd/4429<br>Present Position: Architect (Senior Software Engineer), Huawei, China |
| 2012/9 - 2016/11<br>Principal Supervisor | Ning Xie (Completed) , Western University<br>Thesis/Project Title: Towards Comprehensive Parametric Code Generation Targeting Graphics Processing Units in Support of Scientific Computation<br>Project Description: https://ir.lib.uwo.ca/etd/4257<br>Present Position: Principla Engineer, Huawei Technologies Canada Co., Ltd. |
| 2012/5 - 2017/5<br>Principal Supervisor | Parisa Alvandi (Completed) , Western University<br>Thesis/Project Title: Computing Limit Points of Quasi-components of Regular Chains and its Applications<br>Project Description: https://ir.lib.uwo.ca/etd/4565<br>Present Position: Researcher, Pixyz Software, Montreal, Canada |
| 2009/9 - 2014/12<br>Co-Supervisor | Paul Vrbik (Completed) , Western University<br>Student Degree Received Date: 2014/12<br>Thesis/Project Title: Computing Intersection Multiplicity via Triangular Decomposition<br>Project Description: https://ir.lib.uwo.ca/etd/2631<br>Present Position: Assistant Professor, University of Toronto at Mississauga |

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| 2009/1 - 2013/11<br>Principal Supervisor | Sardar Anisul Haque (Completed) , Western University<br>Thesis/Project Title: Hardware Acceleration Technologies in Computer Algebra: Challenges and Impact.<br>Project Description: https://ir.lib.uwo.ca/etd/1803<br>Present Position: Associate Professor, Otterbein University, USA |
| 2007/9 - 2011/8<br>Principal Supervisor | Changbo Chen (Completed) , Western University<br>Thesis/Project Title: Solving Polynomial Systems via Triangular Decomposition<br>Project Description: https://ir.lib.uwo.ca/etd/255<br>Present Position: Associate Professor, Chongqing Institute of Green and Intelligent Technology, Chinese Academy of Sciences |
| 2006/9 - 2011/1<br>Principal Supervisor | Wei Pan (Completed) , Western University<br>Thesis/Project Title: Algorithmic Contributions to the Theory of Regular Chains<br>Project Description: https://ir.lib.uwo.ca/etd/80<br>Present Position: Senior Compiler Engineer, NVIDIA, Santa Clara, California |
| 2005/9 - 2009/4<br>Principal Supervisor | Xin Li (Completed) , Western University<br>Student Degree Received Date: 2009/4<br>Thesis/Project Title: Toward High-performance Polynomial System Solvers Based on Triangular Decompositions.<br>Project Description: https://www.csd.uwo.ca/~mmorenom/Publications/XinLiPhDThesis-2008.pdf<br>Present Position: Software Engineer |
| 2003/1 - 2007/9<br>Co-Supervisor | Yuzhen Xie (Completed) , Western University<br>Student Degree Received Date: 2007/9<br>Thesis/Project Title: Fast algorithms, modular methods, parallel approaches and software engineering for solving polynomial systems symbolically<br>Project Description: http://people.csail.mit.edu/yxie/publications/ThesisYuzhenXie.pdf<br>Present Position: Senior Audit Manager, Scotia Bank, Canada |

**Post-doctorate [n=12]**

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| 2022/9 - 2023/4<br>Principal Supervisor | Alexander Brandt (In Progress) , Western University<br>Specialization: Computer Science<br>Thesis/Project Title: Dynamically Finding Optimal Kernel Launch Parameters Targeting CUDA Programs<br>Present Position: Lecturer, University of Western Ontario |
| 2018/3 - 2019/8<br>Principal Supervisor | Rui-Juan Jing (Completed) , The University of Western Ontario<br>Thesis/Project Title: Computing the Integer Points of a Parametric Polyhedron<br>Present Position: Assistant Professor, Jiangsu University , China |
| 2018/1 - 2019/12<br>Principal Supervisor | Robert H. C. Moir (Completed) , The University of Western Ontario<br>Thesis/Project Title: Triangular Decomposition of Polynomial Systems with the BPAS library<br>Present Position: Chief Science Officer, Earth64, Toronto, Canada |
| 2017/5 - 2017/8<br>Principal Supervisor | Parisa Alvandi (Completed) , University of Western Ontarioo<br>Thesis/Project Title: Implementation of Regular chains in the Basic Polynomial Algebra Subprograms<br>Present Position: Researcher, Pixyz Software, Montreal, Canada |
| 2014/3 - 2015/2<br>Principal Supervisor | Liangyu Chen (Completed) , The University of Western Ontario<br>Thesis/Project Title: Resultant computation on the GPU<br>Present Position: Assistant Professor, East China Normal University, China |

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| 2014/3 - 2014/7<br>Principal Supervisor | Yi Li (Completed) , The University of Western Ontario<br>Thesis/Project Title: Linear Programming over Rational Functional Fields<br>Present Position: Researcher, Chongqing Institute of Green and Intelligent Technology, Chinese Academy of Sciences |
| 2011/9 - 2013/12<br>Principal Supervisor | Changbo Chen (Completed) , The University of Western Ontario<br>Thesis/Project Title: Computer Algebra and High-Performance Computing Support for Model Predictive Control<br>Present Position: Associate Professor, Chongqing Institute of Green and Intelligent Technology, Chinese Academy of Sciences |
| 2011/5 - 2012/1<br>Co-Supervisor | Yuzhen Xie (Completed) , The University of Western Ontario<br>Thesis/Project Title: Cache-oblivious and adaptive algorithms in symbolic computation<br>Present Position: Senior Audit Manager, Scotia Bank, Canada |
| 2010/1 - 2010/6<br>Principal Supervisor | Ekaterina Shemyakova (Completed) , Western University<br>Thesis/Project Title: Heuristical strategies for variable ordering section in solving large sparse polynomial systems<br>Present Position: Associate Professor, University of Toledo, Ohio, USA |
| 2009/9 - 2012/12<br>Principal Supervisor | Rong Xiao (Completed) , The University of Western Ontario<br>Thesis/Project Title: High Performance Real Solving Tools in Support of Industrial Applications<br>Present Position: Senior Software Engineer, Amazon Web Services, Mississauga, Ontario, Canada |
| 2006/9 - 2007/12<br>Co-Supervisor | Oleg Golubitsky (Completed) , Western University<br>Thesis/Project Title: Triangular decompositions of systems of differential equations.<br>Present Position: Software Developer, Google, Canada |
| 2003/5 - 2003/8<br>Principal Supervisor | François Lemaire (Completed) , Western University<br>Specialization: Computer Science<br>Thesis/Project Title: Implementation of regular chains in Maple.<br>Present Position: Associate Professor, University of Lille, France |

## Event Administration

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| 2020/7 - 2022/12 | General Chair, The International Symposium on Symbolic and Algebraic Computation (ISSAC), Conference, 4-7 July 2022<br>Selection and coordination of the conference officers, coordination with the sponsors and invited presenters, supervision of and editorial work for the conference proceedings.<br>https://www.issac-conference.org/2022/ |
| 2002/1 - 2022/7 | Co-organizer (with Stephen M. Watt) and presenter, CATLAN'02, Workshop on Categorical Programming Languages. Lille, France, 2002., Workshop<br>Local arrangements, selection of, and, coordination with, the presenters. http://www.sigsam.org/issac/2002/related.html |
| 2017/1 - 2017/7 | Co-Chair (with Jeremy R. Johnson), High-performance Computer Algebra session at ACA 2017, Jerusalem, July 17-21, 2017., Workshop<br>Selection of and coordination with the presenters. https://www.csd.uwo.ca/~mmorenom/HPCA-ACA-2017/hpca_2017_abstract.htm |
| 2014/1 - 2014/7 | Co-organizer (with Changbo Chen) and presenter, ICMS 2014 Session: Software, design and practice in triangular decompositions of polynomial systems, Workshop<br>Selection of, and, coordination with, the presenters https://www.csd.uwo.ca/~mmorenom/ICMS_Triangular_Decomposition_Session.html |

2014/5 - 2014/6 Co-organizer (with Fatima Abu Salem) and presenter, Mini-Course on High-Performance Computing at the American University of Beirut (AUB), Course
This 3-day mini-course, held at the American University of Beirut (AUB) June 16-18, 2014, Beirut, Lebanon, attempts to cover a variety of techniques for improving performance of multithreaded code on hardware accelerators, in particular Graphics Processing Units (GPUs). https://www.csd.uwo.ca/~mmorenom/AUB_Mini_course.html

2013/5 - 2014/2 Co-organizer (with Fatima Abu Salem) and presenter, SIAM Workshop on High Performance Symbolic Computation, as part of the SIAM Conference on Parallel Processing for Scientific Computing (PP14) February 18-21, 2014 in Portland Oregon ., Workshop
Selection of, and, coordination with, the presenters. http://www.siam.org/meetings/pp14/

2013/1 - 2013/8 Co-organizer (with James H. Davenport), SIAM Workshop on Cylindrical Algebraic Decomposition and Quantifier Elimination, as part of the SIAM Conference on Applied Algebraic Geometry, Fort Collins, campus of Colorado State University, August 1-4, 2013., Workshop
Selection of, and, coordination with, the presenters. http://www.siam.org/meetings/ag13/

2012/1 - 2012/6 Co-organizer (with Changbo Chen) and presenter, CAIMS Workshop on the Applications of computer algebra in applied and industrial mathematics, as part of the the CAIMS 2012 meeting will be held at the Fields Institute for Research in the Mathematical Sciences, Toronto, June 24-28th, 2012., Workshop
Selection of, and, coordination with, the presenters. https://caims.ca/news/caims-2012/

2012/1 - 2012/6 Co-Chair (with James H. Davenport), SIAM Workshop on the Interactions between Computer Algebra and Discrete Mathematics, as part of the SIAM Conference on Discrete Mathematics, June 18-21 2012, Dalhousie University, Jalifax, Nova Scotia, Canada., Workshop
Selection of, and, coordination with, the presenters. http://www.siam.org/meetings/dm12

2011/1 - 2011/8 Co-organizer (with Changbo Chen) and presenter, AMMCS Workshop on High Performance Computing: From Models of Computation to Applica- tions . as part of the Laurier Centennial Conference: AMMCS-2011., Workshop
Selection of, and, coordination with, the presenters. http://www.ammcs2011.wlu.ca/SS-HPC.html

2009/9 - 2010/7 Co General Chair (with Jean-Louis Roch), 4th International Workshop on Parallel and Symbolic Computation (PASCO'10), Grenoble (France), July 21-23,, Conference
Selection and coordination of the conference officers, coordination with the sponsors and invited presenters, search for and administration of funding, supervision of and editorial work for the conference proceedings. https://pasco2010.imag.fr/

2009/1 - 2009/7 Co-Chair (with Jeremy R. Johnson), High-Performance Computer Algebra Session at ACA 2009, Workshop
Selection of, and, coordination with, the presenters. https://www.csd.uwo.ca/~mmorenom/HPCA-ACA-2009/hpca_abstract.htm

2007/9 - 2008/5 Co-Chair (with Mike Monagan and Mark Giesbrecht ), MOCAA M3 Workshop in Computational Algebra 2008, London, Ontario, May 5-9, 2008., Workshop
Local arrangements, selection of, and, coordination with, the presenters. http://www.cecm.sfu.ca/events/MOCAA08/

2006/9 - 2007/7 General Chair, Parallel Symbolic Computation (PASCO' 07) International Workshop, 27 - 28 July 2007 University of Western Ontario, Conference
Selection and coordination of the conference officers, coordination with the sponsors and invited presenters, search for and administration of funding, supervision of and editorial work for the conference proceedings. https://orcca.on.ca/conferences/pasco2007/site/index.html

2005/4 - 2006/4 — General Chair, Transgressive Computing 2006. A Conference in Honor of Jean Della Dora. Facultad de Ciencias, Universidad de Granada, Spain, 24 - 26 April, 2006., Conference
Selection and coordination of the conference officers, coordination with the sponsors and invited presenters, search for and administration of funding, supervision of and editorial work for the conference proceedings. https://orcca.on.ca/conferences/tc2006/site/travel/travel.html

2005/1 - 2005/7 — Co-Chair (with Eric Schost), Session on Newton and Hensel Techniques in Scientific Computing at ACA'05, Nara, Japan, July 31 - August 3, 2005., Workshop
Selection of, and, coordination with, the presenters. http://www.jssac.org/Conference/ACA/

2004/1 - 2004/7 — Co-organizer (with Stephen M. Watt) and presenter, CATLAN' 04, the Workshop on Categorical Programming Languages. Santander, Spain, July 2004., Workshop
Selection of, and, coordination with, the presenters. http://www.sigsam.org/issac/2002/related.html

2000/7 - 2002/12 — Local Arrangement Chair, Exhibits and Demos Chair, International Symposium on Symbolic and Algebraic Computation (ISSAC 2002), University of Lille, France, July 07-10, 2002, Conference
Local arrangements, search for and administration of funding, organization of software demonstrations. https://www.sigsam.org/issac/2002/

1999/9 - 2000/7 — Exhibitor Chair, International Symposium on Symbolic and Algebraic Computation (ISSAC) August 6-9, 2000, St Andrews University St Andrews, Fife, Scotland., Conference
Search for and co-administration of funding, chair of software demonstrations. http://www-gap.dcs.st-and.ac.uk/issac2000

1999/1 - 1999/7 — Co-organizer with Laureano Gonzàlez Vega, ICIAM99 Workshop on the FRISCO European research project , ICIAM'99. conference, 5-9 July-1999, Edinburgh, Scotland., Workshop
Selection of, and, coordination with, the presenters. https://iciam.org/event/iciam-1999-%E2%80%93-edinburgh

## Editorial Activities

2021/3 — Editor, Maple Transactions, Journal
Handling the review process online, and making recommendations. https://mapletransactions.org/index.php/maple/index

2009/9 - 2014/6 — Editor, Journal of Systems Science and Complexity (JSSC), Journal
Handling the review process online, and making recommendations. https://www.springer.com/journal/11424

## Conference Review Activities

2022/6 - 2022/8 — Program Committee Member, Conference of the Center for Advanced Studies on Collaborative Research (CASCON 2022). https://www-40.ibm.com/ibm/cas/cascon/cfwte.jsp, Blind

2022/4 - 2022/6 — Program Committee Member, 24th International Workshop on Computer Algebra in Scientific Computing (CASC 2022)/ https://www.casc-conference.org/index.html, Blind

2021/6 - 2021/8 — Program Committee Member, Conference of the Center for Advanced Studies on Collaborative Research (CASCON 2021). https://www-40.ibm.com/ibm/cas/cascon/archives/cascon2021.pdf, Blind

2021/4 - 2021/6 Program Committee Member, 23rd International Workshop on Computer Algebra in Scientific Computing (CASC 2021). https://casc-conference.org/2021/index.html, Blind

2021/2 - 2021/4 Reviewer, International Symposium on Symbolic and Algebraic Computation (ISSAC 2021). https://issac-conference.org/2021/, Blind

2020/6 - 2020/8 Program Committee Member, Conference of the Center for Advanced Studies on Collaborative Research (CASCON 2020). https://www-40.ibm.com/ibm/cas/cascon/archives/cascon2020.pdf, Blind

2020/4 - 2020/6 Program Committee Member, 22nd International Workshop on Computer Algebra in Scientific Computing (CASC 2020) https://casc-conference.org/2020/index.html, Blind

2020/1 - 2020/6 Program Committee Member, International Symposium on Symbolic and Algebraic Computation (ISSAC 2020). https://issac-conference.org/2020/, Blind

2019/6 - 2019/7 Program Committee Member, Conference of the Center for Advanced Studies on Collaborative Research (CASCON 2019). https://www-40.ibm.com/ibm/cas/cascon/archives/cascon2019.pdf, Blind

2019/4 - 2019/6 Program Committee Member, 21st International Workshop on Computer Algebra in Scientific Computing (CASC 2019) https://www.casc-conference.org/2019/index.html, Blind

2019/2 - 2019/6 Reviewer, International Symposium on Symbolic and Algebraic Computation (ISSAC 2019). https://issac-conference.org/2019/, Blind

2018/6 - 2018/8 Program Committee Member, Conference of the Center for Advanced Studies on Collaborative Research (CASCON 2018). https://www-40.ibm.com/ibm/cas/cascon/archives/cascon2018.pdf, Blind

2018/4 - 2018/6 Program Committee Member, 20th International Workshop on Computer Algebra in Scientific Computing (CASC 2018) http://www.casc.cs.uni-bonn.de/2018/, Blind

2018/2 - 2018/4 Reviewer, International Symposium on Symbolic and Algebraic Computation (ISSAC 2018). https://issac-conference.org/2018/, Blind

2017/4 - 2017/6 Program Committee Member, 19th International Workshop on Computer Algebra in Scientific Computing (CASC 2017) http://www.casc.cs.uni-bonn.de/2017/, Blind

2017/2 - 2017/4 Reviewer, International Symposium on Symbolic and Algebraic Computation (ISSAC 2017). https://issac-conference.org/2017/, Blind

2016/4 - 2016/6 Program Committee Member, 18th International Workshop on Computer Algebra in Scientific Computing (CASC 2016) http://www.casc.cs.uni-bonn.de/2016/, Blind

2016/2 - 2016/4 Reviewer, International Symposium on Symbolic and Algebraic Computation (ISSAC 2016). https://issac-conference.org/2016/, Blind

2015/4 - 2015/6 Program Committee Member, 17th International Workshop on Computer Algebra in Scientific Computing (CASC 2015) http://www.casc.cs.uni-bonn.de/2015/, Blind

2015/1 - 2015/6 Program Committee Member, International Symposium on Symbolic and Algebraic Computation (ISSAC 2015). https://issac-conference.org/2015/, Blind

2014/4 - 2014/6 Program Committee Member, 16th International Workshop on Computer Algebra in Scientific Computing (CASC 2014) http://wwwmayr.in.tum.de/konferenzen/CASC2014/, Blind

2014/2 - 2014/4 Reviewer, International Symposium on Symbolic and Algebraic Computation (ISSAC 2014). https://issac-conference.org/2014/, Blind

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| 2013/4 - 2013/6 | Program Committee Member, 15th International Workshop on Computer Algebra in Scientific Computing (CASC 2013) http://wwwmayr.in.tum.de/konferenzen/CASC2013/, Blind |
| 2013/2 - 2013/4 | Reviewer, International Symposium on Symbolic and Algebraic Computation (ISSAC 2013). https://issac-conference.org/2013/, Blind |
| 2012/4 - 2012/6 | Program Committee Member, 14th International Workshop on Computer Algebra in Scientific Computing (CASC 2012) http://wwwmayr.in.tum.de/konferenzen/CASC2012/, Blind |
| 2012/2 - 2012/4 | Reviewer, International Symposium on Symbolic and Algebraic Computation (ISSAC 2012). https://issac-conference.org/2012/, Blind |
| 2011/4 - 2011/6 | Program Committee Member, 13th International Workshop on Computer Algebra in Scientific Computing (CASC 2011) http://wwwmayr.in.tum.de/konferenzen/CASC2011/, Blind |
| 2011/1 - 2011/6 | Program Committee Member, International Symposium on Symbolic and Algebraic Computation (ISSAC 2011) https://issac-conference.org/2011/, Blind |
| 2010/4 - 2010/6 | Program Committee Member, 12th International Workshop on Computer Algebra in Scientific Computing (CASC 2010) http://wwwmayr.in.tum.de/konferenzen/CASC2010/, Blind |
| 2010/2 - 2010/4 | Reviewer, International Symposium on Symbolic and Algebraic Computation (ISSAC 2010). https://issac-conference.org/2010/, Blind |
| 2009/4 - 2009/6 | Program Committee Member, 11th International Workshop on Computer Algebra in Scientific Computing (CASC 2009) http://wwwmayr.in.tum.de/konferenzen/CASC2009/, Blind |
| 2009/2 - 2009/4 | Reviewer, International Symposium on Symbolic and Algebraic Computation (ISSAC 2009). http://issac2009.kias.re.kr/, Blind |
| 2008/2 - 2008/4 | Reviewer, International Symposium on Symbolic and Algebraic Computation (ISSAC 2008). https://dblp.org/db/conf/issac/issac2008.html, Blind |
| 2007/2 - 2007/4 | Reviewer, International Symposium on Symbolic and Algebraic Computation (ISSAC 2007). https://cs.uwaterloo.ca/conferences/issac2007/, Blind |
| 2006/2 - 2006/4 | Reviewer, International Symposium on Symbolic and Algebraic Computation (ISSAC 2006). http://issac2006.dima.unige.it/, Blind |
| 2005/2 - 2005/4 | Reviewer, International Symposium on Symbolic and Algebraic Computation (ISSAC 2005) . http://www.mmrc.iss.ac.cn/issac2005/, Blind |

## Graduate Examination Activities

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|---|---|
| 2023/1 | Thesis Defense Examiner, Aishat Olagunju, University of Western Ontario |
| 2022/12 | PhD External Examiner, Hamed Hessam, University of Western Ontario |
| 2022/8 | PhD External Examiner, Felix Baril Boudreau, University of Western Ontario |
| 2021/12 | PhD External Reader, Aftab Yusuf Patel, University of Western Ontario |
| 2021/10 | PhD External Examiner, Sergio R. Zapata Ceballos, University of Western Ontario |
| 2021/8 | PhD External Examiner, Andrew Herring, University of Western Ontario |
| 2021/7 | Thesis Defense Examiner, Piyush Kumar Korlepara, University of Western Ontario |
| 2020/10 | Thesis Defense Examiner, Vincent Sippola, University of Western Ontario |

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| 2019/12 | PhD External Examiner, Mohammadamin Saburruhmonfared, University of Western Ontario |
| 2019/8 | Thesis Defense Examiner, Evan Debenham, University of Western Ontario |
| 2019/4 | Thesis Defense Examiner, Nasim Samei, University of Western Ontario |
| 2019/1 | Thesis Defense Examiner, Zhongwen Zhang, University of Western Ontario |
| 2018/5 | Thesis Defense Examiner, Zihao Wang, University of Western Ontario |
| 2018/5 | Thesis Defense Examiner, Komla Amenyou Folitse, University of Western Ontario |
| 2017/12 | Thesis Defense Examiner, Stephen Lu, University of Western Ontario |
| 2017/12 | Thesis Defense Examiner, Shaofeng Jiang, University of Western Ontario |
| 2017/8 | PhD External Examiner, Armin Jamshidpey, University of Western Ontario |
| 2017/6 | Thesis Defense Examiner, Michael J. Burrel, University of Western Ontario |
| 2017/4 | Thesis Defense Examiner, Monagi Alkinani, University of Western Ontario |
| 2017/4 | Thesis Defense Examiner, Fawzi Yassine, University of Western Ontario |
| 2017/3 | Thesis Defense Examiner, Seyed Mohsen Zabihi, University of Western Ontario |
| 2016/10 | PhD External Examiner, Fei Wang, University of Western Ontario |
| 2016/8 | Thesis Defense Examiner, Eunice Yu Sze Chan, University of Western Ontario |
| 2015/12 | Thesis Defense Examiner, Egor Chesakov, University of Western Ontario |
| 2015/9 | Thesis Defense Examiner, Javad Doliskani, University of Western Ontario |
| 2015/6 | PhD External Examiner, Martin Helmer, University of Western Ontario |
| 2015/6 | PhD External Examiner, Hayssam El-Razouk, University of Western Ontario |
| 2015/5 | PhD External Examiner, Michael Rogelstad, University of Western Ontario |
| 2015/4 | PhD External Examiner, Xuan Liu, University of Western Ontario |
| 2014/12 | Thesis Defense Examiner, Mahmud Hasan, University of Western Ontario |
| 2014/7 | PhD External Examiner, Gaohong Wang Ghost, University of Western Ontario |
| 2014/6 | Thesis Defense Examiner, Esmaeil Mehrabi, University of Western Ontario |
| 2014/4 | Thesis Defense Examiner, Mohammad Mahedi Hasan, University of Western Ontario |
| 2014/3 | Thesis Defense Examiner, Devin Price, University of Western Ontario |
| 2013/11 | Thesis Defense Examiner, Foizul Islam Chowdhury, University of Western Ontario |
| 2013/11 | PhD External Examiner, Ebrahim Abdulrahman Hasan Abdulrahman, University of Western Ontario |
| 2013/10 | PhD External Examiner, Yiming Zhang, University of Western Ontario |
| 2013/4 | Thesis Defense Examiner, Yanxin Li, University of Western Ontario |
| 2013/4 | Thesis Defense Examiner, Asaduzzaman Babu, University of Western Ontario |
| 2012/8 | Thesis Defense Examiner, Leal Aulenbacher, University of Western Ontario |
| 2012/4 | Thesis Defense Examiner, Zhendong Shao, University of Western Ontario |
| 2012/4 | Thesis Defense Examiner, Jonathan Leaver, University of Western Ontario |
| 2012/4 | PhD External Examiner, Irene Cheung, University of Western Ontario |
| 2011/12 | Thesis Defense Examiner, Jahedur Chowdhury, University of Western Ontario |

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|---|---|
| 2011/8 | Thesis Defense Examiner, Yehia Kotb, University of Western Ontario |
| 2011/4 | Thesis Defense Examiner, Javad Doliskani, University of Western Ontario |
| 2011/4 | PhD External Examiner, Mehdi Garrousian, University of Western Ontario |
| 2010/6 | Thesis Defense Examiner, Nivedita Patil, University of Western Ontario |
| 2010/6 | Thesis Defense Examiner, Rachita Mohan, University of Western Ontario |
| 2009/4 | Thesis Defense Examiner, Muhammad Chowdhury, University of Western Ontario |
| 2009/4 | Thesis Defense Examiner, Ling Ding, University of Western Ontario |
| 2009/4 | Thesis Defense Examiner, Ling Ding, University of Western Ontario |
| 2009/4 | PhD External Examiner, Hui Ding, University of Western Ontario |
| 2007/12 | Thesis Defense Examiner, Matthew Malefant, University of Western Ontario |
| 2007/12 | PhD External Examiner, Azar Shakoori, University of Western Ontario |
| 2007/12 | Thesis Defense Examiner, Xiaofang Xie, University of Western Ontario |
| 2007/9 | Thesis Defense Examiner, Laurentiu Dragan, University of Western Ontario |
| 2007/8 | Thesis Defense Examiner, Qing Zhao, University of Western Ontario |
| 2007/4 | PhD External Examiner, Wenqin Zhou, University of Western Ontario |
| 2006/12 | Thesis Defense Examiner, Heba Anbeer, University of Western Ontario |
| 2006/4 | PhD External Examiner, Songxin Liang, University of Western Ontario |
| 2005/12 | Thesis Defense Examiner, Nargol Rezvani, University of Western Ontario |
| 2005/12 | Thesis Defense Examiner, Elena Losseva, University of Western Ontario |
| 2005/11 | Thesis Defense Examiner, Cosmin Oancea, University of Western Ontario |
| 2005/7 | Thesis Defense Examiner, Andrew Skryzhynskyy, University of Western Ontario |
| 2005/5 | Thesis Defense Examiner, Juntao Ye, University of Western Ontario |
| 2005/3 | Thesis Defense Examiner, Ben Huang, University of Western Ontario |
| 2004/12 | Thesis Defense Examiner, Kevin Durdle, University of Western Ontario |
| 2004/9 | Thesis Defense Examiner, Yong Lei, University of Western Ontario |
| 2003/9 - 2007/7 | Candidacy Committee Member, Wenyuan Wu, University of Western Ontario |

## Research Funding Application Assessment Activities

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|---|---|
| 2018/7 - 2021/6 | Committee Member, Evaluation Group 1507 for Discovery Grant Applications., Academic Reviewer, Natural Sciences and Engineering Research Council of Canada (NSERC)<br>Research Disciplines: Computer Science |

## Organizational Review Activities

| | |
|---|---|
| 2007/1 - 2011/1 | Member of the SHARCNET Resource Allocation Committee, SHARCNET<br>Providing assessment and recommendations on the applications that are made to SHARCNET for Fellowships and Dedicated Resources. https://www.sharcnet.ca/my/front/ |

## Committee Memberships

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|---|---|
| 2011/11 | Committee Member, NSF/IEEE-TCPP (Technical Committee on Parallel Processing), IEEE Society<br>Providing assessment and participating to meetings |
| 2013/5 - 2014/4 | Committee Member, C Standards Committee<br>Providing assessment and participating to meetings https://isocpp.org/std/the-committee |

## Other Memberships

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| 2002/8 | Scientific Director, Ontario Research Center for Computer Algebra<br>The Ontario Research Centre for Computer Algebra (ORCCA) is a multidisciplinary team centered at the Universities of Waterloo and Western Ontario. The core members at those universities are joined by individuals at Simon Fraser, Wilfrid Laurier, McMaster, and Waterloo (Engineering). The team comprises computer scientists, mathematicians, and engineers. ORCCA performs fundamental research and development in computer algebra. The Centre started its activities in 1997 and was officially founded in 1999 with the support of government and private sector sources. https://www.orcca.on.ca/ |

## Presentations

1. (2022). Triangularize 2.0: Combatting Expression Swell. Groupe de travail de l'equipe CFHP (Calcul formel et hautes performances), Universite de Lille, France, 30 Novembre 2022,
   Invited?: Yes
2. (2022). Implementation Techniques for Power, Laurent, and Puiseux Series in Several Variables. CASC 2022, Gebze, Turkey, 22 August 2202,
   Invited?: Yes, Keynote?: Yes
3. (2022). Cache Complexity in Computer Algebra. Seminar École Polytechnique, 5 Décembre 2022,
   Invited?: Yes
4. (2022). Two contributions to the theory and practice of optimizing compilers. Seminaire du Laboratoire CRIStAL, Universite de Lille, 7 Décembre 2022,
   Invited?: Yes
5. (2021). Parallelization of Triangular Decompositions: Design and Implementation with the BPAS library. Sage/Oscar Days, online conference, October 30, 2021,
   Invited?: Yes, Keynote?: Yes
6. (2021). Design and Implementation of Multi-Threaded Algorithms in Polynomial Algebra. ISSAC 2021, Saint Petersburg, Russia (online conference),
   Invited?: Yes, Keynote?: Yes
7. (2018). Polynomials over Power Series and their Applications to Limit Computations (tutorial version). CASC 2018 Tutorial, University of Lille, September 17, 2018,
   Invited?: Yes, Keynote?: Yes
8. (2017). On the Extended Hensel Construction and its Application to the Computation of Limit Points. ISSAC 2017: Kaiserslautern,
   Invited?: No
9. (2017). Cache Memories, Cache Complexity. ACA, Session on High-Performance Computer Algebra, Jerusalem College of Technology,
   Invited?: Yes

10. (2017). Comprehensive Optimization of Parametric Kernels for Graphics Processing Units. ACA, Session on High-Performance Computer Algebra, Jerusalem College of Technology,
Invited?: Yes

11. (2017). Models of Computation for Graphics Processing Units. 12th Workshop on Challenges for Parallel Computing, CASCON 2017, Markham ON,
Invited?: Yes

12. Changbo Chen. (2016). Parallel Integer Polynomial Multiplication. SYNASC, West University of Timisoara,
Invited?: No

13. Parisa Alvandi. (2016). Computing Limits of Real Multivariate Rational Functions. ISSAC 2016, Waterloo, ON.,
Invited?: No

14. (2016). Automatic Parallelization of Computer Programs: From C to CUDA. TRICS Seminar, University of Western Ontario,
Invited?: Yes

15. (2016). Comprehensive Optimization of Parametric Kernels for Graphics Processing Units. 15th Workshop on Compiler-Driven Performance. CASCON 2016, Markham ON.,
Invited?: Yes

16. (2015). Symbolic-Numeric Integration of Rational Functions with the BPAS Library. Chongqing Institute of Green and Intelligent Technology, Chinese Academy of Sciences, ChongQing, China,
Invited?: Yes

17. (2015). Solving Parametric Polynomial Optimization via Triangular Decomposition. ICIAM 2015, Beijing,
Invited?: Yes

18. (2015). Quantifier Elimination, Polyhedral Computations and their Applications to the Parallelization of Computer Programs. East Coast Computer Algebra Day, The Fields Institute,
Invited?: Yes

19. (2015). Simplification of Cylindrical Algebraic Formulas. CASC, Aachen,
Invited?: No

20. (2015). A Standard Basis Free Algorithm for Computing the Tangent Cones of a Space Curve. CASC, Aachen,
Invited?: No

21. (2015). Optimizing Computer Programs: A Killer App for Scientific Computing?. Chongqing Institute of Green and Intelligent Technology, Chinese Academy of Sciences, Chongqing,
Invited?: Yes

22. (2015). MetaFork: A Compilation Framework for Concurrency Models Targeting Hardware Accelerators and Its Application to the Generation of Parametric CUDA Kernels. Technical Paper Session. CASCON 2015, Markham ON.,
Invited?: No

23. (2015). Regular Chains under Linear Changes of Coordinates and Applications. CASC, Aachen,
Invited?: No

24. (2014). Dense Arithmetic over Finite Fields with CUMODP. ICMS 2014, Seoul, Korea,
Invited?: No

25. (2014). The Basic Linear Algebra Subprograms. ISSAC 2014, Kobe, Japan,
Invited?: No

26. (2014). Solving Parametric Polynomial Systems by RealComprehensiveTriangularize. ICMS 2014, Seoul, Korea,
Invited?: No

27. (2014). Real Quantifier Elimination in the RegularChains Library. ICMS 2014, Seoul, Korea,
Invited?: No

28. (2014). Quantifier Elimination by Cylindrical Algebraic Decomposition Based on Regular Chains. ISSAC 2014, Kobe, Japan,
Invited?: No

29. (2014). Cylindrical Algebraic Decomposition in the RegularChains Library. ICMS 2014, Seoul, Korea,
Invited?: No

30. (2014). Tutorial on the theory and practice of regular chains. IPM, Teheran, Iran (summer course, 5 days of lecture),
Invited?: Yes, Keynote?: Yes

31. (2014). Doing Algebraic Geometry with the RegularChains Library. ICMS 2014, Seoul, Korea,
Invited?: No

32. (2014). The Basic Polynomial Algebra Subprograms. ICMS 2014, Seoul, Korea,
Invited?: Yes

33. (2014). Doing Algebraic Geometry with the RegularChains Library. ACA 2014, Fordham University, NY, USA.,
Invited?: Yes

34. (2014). Triangular decomposition of semi-algebraic systems. IPM, Teheran, Iran,
Invited?: Yes

35. (2014). A Many-core Machine Model for Designing Algorithms with Minimum Parallelism Overheads. 9th Workshop on Challenges for Parallel Computing, CASCON 2014, Markham, ON.,
Invited?: Yes

36. (2013). MetaFork: A Metalanguage for Concurrency Platforms Targeting Multicores. WG14 C Standards Committee Meeting, Chicago,
Invited?: Yes, Keynote?: Yes

37. (2013). Optimizing Algorithms and Code for Data Locality and Parallelism: A SHARCNET Tutorial. SHARCNET Summer Seminar, London, Ontario,
Invited?: Yes

38. (2013). An Incremental Algorithm for Computing Cylindrical Algebraic Decomposition and Its Application to Quantifier Elimination. SIAM Algebraic Geometry, Fort Collins, Colorado,
Invited?: Yes

39. (2013). Optimizing Algorithms and Code for Data Locality and Parallelism Targeting Multicore Architectures Using Cilk. University Wilfrid Laurier, Waterloo, ON.,
Invited?: Yes

40. (2013). A Many-core Machine Model for Designing Algorithms with Minimum Parallelism Overheads. HPCS 2013, University of Ottawa,
Invited?: Yes

41. (2013). On the Parallelization of Subproduct Tree Techniques Targeting Many-core Architectures. HPCS 2013, University of Ottawa,
Invited?: Yes

42. (2013). Computing the Limit Points of Quasi-componets of Regular Chains in Diemnsion One. CASC 2013, ZIB, Berlin,
Invited?: Yes

43. (2013). Computing the real solutions of polynomial systems with the RegularChains library in Maple. Graduate Computational Algebraic Geometry Seminar, University of Illinois at Chicago,
Invited?: Yes

44. (2012). What computer algebra systems can offer to tackle realizability problems of matroids?. SIAM Discrete Maths, Halifax,
Invited?: Yes

45. (2012). An Incremental Algorithm for Computing Cylindrical Algebraic Decompositions. ASCM 2012 - Beijing Key Laboratory of Mathematics Mechanization,
Invited?: Yes

46. (2012). On Fulton's Algorithm for Computing Intersection Multiplicities. Michigan Computational Algebraic Geometry Seminar,
Invited?: Yes

47. (2012). Generating Loop Invariants via Polynomial Interpolation. East China Normal University, Shanghai,
Invited?: Yes

48. Yuzhen Xie. (2012). Parallel Generation of Transversal Hypergraphs. SIAM Discrete Maths, Halifax,
Invited?: Yes

49. (2012). Optimizing Algorithms and Code for Data Locality and Parallelism: A SHARCNET Tutorial. SHARCNET Summer Seminar, London, Ontario,
Invited?: Yes

50. (2012). Parallelization Overheads: A SHARCNET Tutorial. SHARCNET Summer Seminar, London, Ontario,
Invited?: Yes

51. (2012). Generating Loop Invariants via Polynomial Interpolation. ASCM 2012 - Beijing Key Laboratory of Mathematics Mechanization,
Invited?: No

52. Changbo Chen. (2011). Algorithms for Computing Triangular Decompositions of Polynomial Systems. ISSAC 2011, San Jose CA,
Invited?: No

53. (2011). Optimizing Algorithms and Code for Data Locality and Parallelism: A SHARCNET Tutorial. SHARCNET Summer Seminar, London, Ontario,
Invited?: Yes

54. Changbo Chen and Yuzhen Xie. (2011). Parallel Univariate Real Root Isolation on Multicores. AMMCS 2011, Waterloo, ON.,
Invited?: Yes

55. (2011). Semi-algebraic description of the equilibria of dynamical systems. CASC 2011, Kassel Germany,
Invited?: No

56. (2011). Triangular decomposition of semi-algebraic systems. Algebra Seminar, University of Western Ontario,
Invited?: Yes

57. (2011). Computing the real solutions of polynomial systems with the RegularChains library in Maple. ISSAC 2011, San Jose CA, Best Software Presentation Award,
Invited?: No

58. (2011). Exact Computation of the Real Solutions of Arbitrary Polynomial Systems. ICIAM 2011, Computer Algebra Mini-symposium, Vancouver BC,
Invited?: Yes

59. (2011). Optimizing FFT-based Polynomial Arithmetic for Data Locality and Parallelism. MaGiX@LIX Workshop, Ecole Polytechnique, Palaiseau, France,
Invited?: Yes

60. (2011). Calcul parallele exacte des solutions reelles des systemes algrebriquese. LIFL, Universite de Lille 1,
Invited?: Yes

61. Rong Xiao and Bican Xia. (2011). On parametric polynomial system solving. MACIS 2011, Beijing,
Invited?: No

62. Rong Xiao. (2011). Computing with Semi-Algebraic Sets Represented by Triangular Decomposition. ISSAC 2011, San Jose CA,
Invited?: No

63. Sardar Anisul Haque. (2011). Determinant Computation on the GPU. AMMCS 2011, Waterloo, ON,
Invited?: Yes

64. Sardar Anisul Haque. (2010). Cache Friendly Sparse Matrix Vector Multiplication. Parallel Symbolic Computation (PASCO), Grenoble, France,
Invited?: No

65. (2010). Efficient Evaluation of Large Polynomials. International Congress of Mathematical Software (ICMS), Kobe, Japan,
Invited?: No

66. (2010). Around Montgomery's trick. Various places in 2009 and 2010, including the Supertech group at CSIL, Massachusetts Institute of Technology (MIT),
Invited?: Yes

67. (2009). Triangular Decomposition of Polynomial Systems: Algorithmic Advances and Remaining Challenges. International Conference on Mathematics Mechanization'09 In honor of Prof. Wu Wen-Tsün, Beijing, China,
Invited?: Yes, Keynote?: Yes

68. Yuzhen Xie. (2009). FFT-based Dense Polynomial Arithmetic on Multi-cores. ACA'09, Montréal,
Invited?: Yes

69. (2009). Fundamental Algorithms and Implementation Techniques for Computing with Regular Chain. Summer School of Symbolic Computation, Chengdu, China,
Invited?: Yes, Keynote?: Yes

70. (2009). Real Root Isolation of Regular Chains. ASCM 2009, Fukuoka, Japan,
Invited?: No

71. (2009). Solving Parametric Polynomial Systems with the RegularChains Library in Maple. ACA'09, Montréal,
Invited?: Yes

72. (2009). Computations Modulo Regular Chains. ISSAC'09, Seoul, Korea,
Invited?: No

73. Yuzhen Xie. (2009). Balanced Dense Polynomial Multiplication on Multicores. ACA'09, Montréal,
Invited?: Yes

74. (2009). Differential Algebra, Regular Chains and Modeling. ACA'09, Montréal,
Invited?: Yes

75. Changbo Chen. (2009). Computing Cylindrical Algebraic Decomposition via Triangular Decomposition. ISSAC'09, Seoul, Korea,
Invited?: No

76. (2009). Intersection Formulas and Algorithms for Computing Triangular Decompositions. MACIS 2009, Fukuoka, Japan,
Invited?: No

77. (2008). Computing with Constructible Sets. MOCAA M3 Workshop, London, Ontario,
Invited?: Yes

78. (2008). When does ⟨T⟩ Equal sat(T)?. MOCAA M3 Workshop, London, Ontario,
Invited?: Yes

79. Yuzhen Xie. (2007). Component-level Parallelization of Triangular Decompositions. Interactive Parallel Computation in Support of Research in Algebra, Geometry and Number Theory MSRI Workshop 2007, Berkeley,
Invited?: Yes

80. Yuzhen Xie. (2006). Solving Polynomial Systems Symbolically and in Parallel. MITACS - CAIMS Meeting, Toronto, Canada,
Invited?: Yes

81. (2006). Change of order for regular chains in positive dimension. AGGM'06, Barcelona, Spain,
Invited?: No

82. (2006). Bounds and Algorithms in Differential Alegbra:the Ordinary Case. Dagstuhl Seminar, Dagstuhl, Germany,
Invited?: Yes

83. (2006). AXIOM: Generic, Open, Powerful. International Congress on Mathematical Software, Castro Urdiales, Spain,
Invited?: Yes

84. (2006). Triangular Decompositions of Polynomial Systems: From Theory to Practice. Tutorial at ISSAC'06, Genoa, Italy,
Invited?: Yes, Keynote?: Yes

85. Yuzhen Xie. (2006). Parallelization of Triangular Decompositions. SHARCNET Fall Workshop 2006, Waterloo, Canada,
Invited?: Yes

86. (2005). Lifting Techniques for Triangular Decompositions. MOCCA'05, Calgary, Canada,
Invited?: Yes

87. (2005). On the Complexity of the D5 Principle. CMS (Canadian Mathematical Society) Meeting 2005, London ON,
Invited?: Yes

88. (2005). Some Recipes for Handling Large Expressions in Polynomial System Solving. ACA'05, Japan,
Invited?: Yes

89. (2004). On Polynomial Gcds over Direct Products of Fields Given by Towers of Simple Extensions. MOCCA'04, Waterloo ON.,
Invited?: Yes

90. (2004). Generic Modular Computations in Aldor. CATLAN'04, Santander, Spain,
Invited?: Yes

91. (2004). Solving Systems of Algebraic Equations with AXIOM. ACA'04, Texas, US,
Invited?: Yes

92. (2003). Dr Modular or How I Learned to Stop Worrying and Love Symbolics. ACA'03, North Carolina University, US,
Invited?: Yes

93. (2002). Computation of Canonical Forms for Ternary Cubics. ISSAC'02, Lille, France,
Invited?: No
Description / Contribution Value: Irina Kogan

94. (2002). Recent Advances on Regular Chains. SCA'02, London ON,
Invited?: Yes

95. (2001). PARDI !. ISSAC'01, London ON and talk at INRIA Sophia-Antipolos,
Invited?: No

96. (2001). Integrable (systems of) PDEs and Solitons. ISSAC'01, London ON,
Invited?: No

97. (2001). Around the StandardMath Library. CATLAN'01, London ON,
Invited?: Yes

98. (2000). On Triangular Decompositions of Algebraic Varieties. MEGA 2000, Bath, UK,
Invited?: No

99. (1998). On the Theories of Triangular Sets. Seminar talk at the University of Santander,
Invited?: No

100. (1997). Design of Nonseparable Bidimensional Wavelets and Filter Banks using Gröbner Bases and Triangualr Systems. FRISCO'97, Nice, France,
Invited?: Yes

## Publications

### Journal Articles

1. Mohammadali Asadi, Alexander Brandt, Robert H. C. Moir, Marc Moreno Maza, Yuzhen Xie. (2023). Parallelization of triangular decompositions: Techniques and implementation. J. Symb. Comput.115: 371--406.
http://dx.doi.org/10.1016/j.jsc.2022.08.015
In Press, Elsevier,
Refereed?: Yes, Open Access?: Yes

2. Matt Calder, Juan Pablo Gonzalez Trochez, Marc Moreno Maza, Erik Postma. (2022). A Maple implementation of a modular algorithm for computing the common zeros of a polynomial and a regular chain. Maple Transactions. 2(1): 14448:1 - 14448:19.
http://dx.doi.org/10.5206/mt.v2i1.14448
Published, Maplesoft and Western Libraries,
Refereed?: Yes, Open Access?: Yes

3. Jürgen Gerhard, Marc Moreno Maza, Ryan Sandford. (2022). Computing Intersection Multiplicities with Regular Chains. Maple Transactions. 2(1): 14463:1 - 14463:19.
http://dx.doi.org/10.5206/mt.v2i1.14463
Published, Maplesoft and Western Libraries,
Refereed?: Yes, Open Access?: Yes

4. Juan Pablo González Trochez, Marc Moreno Maza, Matt Calder, Erik Postma. (2022). Algorithms for multivariate Laurent series.ACM Commun. Comput. Algebra.56(2): 64-67.
http://dx.doi.org/10.1145/3572867.3572877
In Press, ACM,
Refereed?: Yes, Open Access?: Yes

5. Marc Moreno Maza, Erik Postma. (2022). Substituting Units into Multivariate Power Series. Maple Transactions. 2(1): 14469:1 - 14469:9.
http://dx.doi.org//10.5206/mt.v2i1.14469
Published, Maplesoft and Western Libraries,
Refereed?: Yes, Open Access?: Yes

6. Francois Boulier, Francois Lemaire, Marc Moreno Maza, Adrien Poteaux. (2021). A Short Contribution to the Theory of Regular Chains. Math. Comput. Sci.15(2): 177--188.
http://dx.doi.org/10.1007/s11786-020-00477-x
Published, Springer,
Refereed?: Yes, Open Access?: No

7. Parisa Alvandi*, Masoud Ataei*, Mahsa Kazemi* and Marc Moreno Maza. (2020). On the Extended Hensel Construction and its application to the computation of real limit points. J. Symb. Comput.98: 120--162.
Published,
Refereed?: Yes

8. Robert H. C. Moir* , Robert M. Corless, Marc Moreno-Maza and Ning Xie*. (2020). Symbolic-numeric integration of rational functions. Numer. Algorithms. 83(4): 1295--1320.
Published,
Refereed?: Yes, Open Access?: No

9. Francois Boulier, Francois Lemaire, Adrien Poteaux and Marc Moreno Maza. (2019). An equivalence theorem for regular differential chains. J. Symb. Comput.93: 34--55.
Published,
Refereed?: Yes, Open Access?: No

10. Rui-Juan Jing* and Marc Moreno Maza. (2018). Computing the integer points of a polyhedron. ACM Commun. Comput. Algebra. 52(4): 126--129.
Published,
Refereed?: Yes, Open Access?: No

11. Sardar Anisul Haque*, X. Li*, Farnam Mansouri*, Marc Moreno Maza, Davood Mohajerani*, Wei Pan. (2017). CUMODP: a CUDA library for modular polynomial computation. ACM Commun. Comput. Algebra. 51(3): 89--91.
Published,
Refereed?: Yes, Open Access?: No

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## Books

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2. Marc Moreno Maza (Editor). (2011). Proceedings of SNC 2011: the 2011 International Workshop on Symbolic-Numeric Computation, San Jose, California, USA, June 7-9, 2011. : 204.
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3. Marc Moreno Maza and Jean-Louis Roch (Editors). (2010). Proceedings of PASCO 10: the 4th International Workshop on Parallel Symbolic Computation, July 21-23, 2010, Grenoble, France.: 192.
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4. Marc Moreno Maza (Editor) and Stephen M. Watt (General Chair). (2008). Proceedings of MICA '08: Milestones in Computer Algebra 2008: A Conference in Honour of Keith Geddes' 60th Birthday.: 271.
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5. Marc Moreno Maza (General Chair) Stephen M. Watt (Editor). (2007). Proceedings of PASCO 2007 : International Workshop on Parallel Symbolic Computation, 27-28 July 2007, University of Western Ontario, London, Ontario, Canada. : 107.
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## Reports

1. Alexander Brandt*, Davood Mohajerani*, Marc Moreno-Maza, Jeeva Paudel, Lin-Xiao Wang*. (2019). KLARAPTOR: A Tool for Dynamically Finding Optimal Kernel Launch Parameters Targeting CUDA Programs. 10. Computing Research Repository (CoRR).

2. Alexander Brandt, Davood Mohajerani*, Marc Moreno-Maza, Jeeva Paudel and Lin-Xiao Wang*. (2019). A Technique for Finding Optimal Program Launch Parameters Targeting Manycore Accelerators. 11. Computing Research Repository (CoRR).

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12. Sardar Anisul Haque*, Marc Moreno Maza and Ning Xie*. (2014). A Many-core Machine Model for Designing Algorithms with Minimum Parallelism Overheads. 14. Computing Research Repository (CoRR).

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18. Changbo Chen*, James H. Davenport, John P. May, Marc Moreno Maza, Bican Xia and Rong Xiao*. (2010). Triangular Decomposition of Semi-algebraic Systems. 8. Computing Research Repository (CoRR).

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## Online Resources

1. Mohammadali Asadi, Alexander Brandt, Juan-Pablo Gonzalez Trochez Mahsa Kazemi, Marc Moreno Maza and Erik Postma. The MultivariatePowerSeries Library. (2021).
Description / Contribution Value: The MultivariatePowerSeries package, which is among new features of Maple 2021, is an object-oriented implementation of multivariate formal power series, Puiseux series and univariate polynomials over such series (UPoPS). This package is written in Maple and provides the ability to create and manipulate multivariate power series with rational or algebraic number coefficients, as well as UPoPS objects whose coefficients are multivariate power series. Through lazy evaluation techniques and a careful implementation, this package achieves high performance in comparison with software counterparts. These power series and UPoPS are employed in optimized implementations of Weierstrass Preparation Theorem and factorization of UPoPS via Hensel's lemma and Puiseux theorem. https://github.com/orcca-uwo/MultivariatePowerSeries

2. Davood Mohajerani, Linxiao Wang, Alexander Brandt and Marc Moreno Maza. KLARAPTOR: A Tool for Dynamically Finding Optimal Kernel Launch Parameters Targeting CUDA Programs. (2019).
Description / Contribution Value: KLARAPTOR is a compile-time tool for CUDA programs which constructs and evaluates a rational program encoding the MWP-CWP performance model to optimize the program's performance. The tool dynamically chooses a kernel's launch parameters (thread block configuration) which optimize its performance for the data and hardware param- eters of the current kernel invocation. More details are provided in the following arxiv paper: https://arxiv.org/abs/1911.02373 Klaraptor implements the principles proposed by the Authorsin the granted US Patent Optimizing Program Parameters in Multithreaded Programming (US 10,901,713 B2). Web site of the project: https://github.com/orcca-uwo/KLARAPTOR

3. Parisa Alvandi, Changbo Chen, Francois Lemaire, Marc Moreno Maza Yuzhen Xie. The RegularChains Library. (2014).
Description / Contribution Value: The RegularChains Library is a collection of commands for solving systems of polynomial equations, inequations and inequalities symbolically. This package also allows the user to manipulate and study the solutions of such systems. The library code is mainly written in the computer algebra software package Maple. The development team (see the list of Authors) is grateful to the following colleagues who have made valuable contributions to the library: Eric Schost (U. Waterloo), Wei Pan (NVIIDIA), Liyun Li (BMO), Bican Xia (Peking U.), James H. Davenport (U. Bath), Md. Nazrul Islam (U. Western Ontario) Paul Vrbik (U. of Toronto), Masoud Ataei (IBM), Mahsa Kazemi (CIBC), Delaram Talaashrafi (U. Western Ontario), Rui-Juan Jing (U. of Henan), Mohammadali Asadi (U. Western Ontario), Alexander Brandt (U. Western Ontario), Ryan Sandford (U. Western Ontario), Juan Pablo Gonzalez Trochez (U. Western Ontario). https://www.regularchains.org/

4. Sardar Anisul Haque, Xin Li, Farnam Mansouri, Marc Moreno Maza, Davood Mohajerani, Wei Pan and Ning Xie. The CUDA Modular Polynomial Library ((CUMODP). (2014).
Description / Contribution Value: The CUDA Modular Polynomial (CUMODP) Library implements arithmetic operations for dense matrices and dense polynomials, primarily with modular integer coefficients. Some operations are available for integer or floating point coefficients. ttps://www.cumodp.org

5. Mohammadali Asadi, Alexander Brandt, Changbo Chen, Svyatoslav Covanov, Mahsa Kazemi, Farnam Mansouri, Davood Mohajerani, Robert Moir, Marc Moreno Maza, Delaram Talaashrafi, Linxiao Wang, Ning Xie and Yuzhen Xie. The Basic Polynomial Algebra Subprograms (BPAS). (2014).
Description / Contribution Value: The Basic Polynomial Algebra Subprograms (BPAS) library provides support for arithmetic operations with polynomials on modern computer architectures, in particular hardware accelerators. Typical operations are polynomial multiplication, multi-point evaluation and interpolation, real root isolation for both univariate and multivariate systems. Its code is written in C++ with CilkPlus extension targeting multi-core processors. BPAS is also available on GitHub. https://bpaslib.org/

6. Xiaohui Chen, Marc Moreno Maza and Ning Xie. The MetaFork framework. (2014).
Description / Contribution Value: MetaFork is a compilation framework for concurrency platforms targeting hardware acceleration technologies. As of today, it consists of a multithreaded language, also called MetaFork, and software tools for performing automatic program translations between CilkPlus, OpenMP and MetaFork. https://www.metafork.org/

## Conference Publications

1. Marc Moreno Maza and Haoze Yuan. (2023). Balanced Dense Multivariate Multiplcation: The General Case. International Symposium on Symbolic and Numeric Algorithms for Scientific Computing (SYNASC), LinZ, Austria, . IEEE Computer Society, United States of America
Conference Date: 2022/9
Paper
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2. Delaram Talaashrafi, Johannes Doerfert, Marc Moreno Maza. (2023). A Pipeline Pattern Detection Technique in Polly. ICPP Workshops '22: Workshop Proceedings of the 51st International Conference on Parallel Processing, Bodeaux, France (1--10). ACM,
http://dx.doi.org/10.1145/3547276.3548445
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Paper
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3. Marc Moreno Maza, Linxiao Wang. (2022). Computing the Integer Hull of Convex Polyhedral Sets. Lecture Notes in Computer Science vol. 13366. Computer Algebra in Scientific Computing (CASC 2022) - 24th International Workshop, Gebze, Turkey, (246--267). Springer,
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4. Mohammadali Asadi, Alexander Brandt, David J. Jeffrey, Marc Moreno Maza. (2022). Subresultant Chains Using Bézout Matrices. Lecture Notes in Computer Science vol. 13366. Computer Algebra in Scientific Computing (CASC) - 24th International Workshop, Gebze, Turkey, (29-50). Springer,
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5. Delaram Talaashrafi, Marc Moreno Maza, Johannes Doerfert. (2022). Towards Automatic OpenMP-Aware Utilization of Fast GPU Memory. Lecture Notes in Computer Science vol. 13527. OpenMP in a Modern World: From Multi-device Support to Meta Programming (IWOMP 2022) - 18th International Workshop on OpenMP., Chattanooga, TN, USA, (67--80). Springer,
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6. Marc Moreno Maza and Ryan Sandford. (2021). Towards Extending Fulton's Algorithm for Computing Intersection Multiplicities Beyond the Bivariate Case. Lecture Notes in Computer Science vol. 12865. Computer Algebra in Scientific Computing (CASC) - 23rd International Workshop, 2021, Sochi, Russia, (232--251). Springer,
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7. Marc Moreno Maza and Linxiao Wang. (2021). On the Pseudo-Periodicity of the Integer Hull of Parametric Convex Polygons. Lecture Notes in Computer Science vol. 12865. omputer Algebra in Scientific Computing (CASC) - 23rd International Workshop,, Sochi, Russia, (252--271),
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8. Alexander Brandt and Marc Moreno Maza. (2021). On the Complexity and Parallel Implementation of Hensel's Lemma and Weierstrass Preparation. Lecture Notes in Computer Science vol. 12865. Computer Algebra in Scientific Computing (CASC) - 23rd International Workshop, 2021, Sochi, Russia, (78--99). Springer,
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9. Mohammadali Asadi, Alexander Brandt, Marc Moreno Maza. (2021). Computational Schemes for Subresultant Chains. Lecture Notes in Computer Science vol. 12865. Computer Algebra in Scientific Computing (CASC) - 23rd International Workshop, 2021, Sochi, Russia., (21--41). Springer,
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11. Mohammadali Asadi, Alexander Brandt, Mahsa Kazemi, Marc Moreno Maza, and Erik J. Postma. (2021). Multivariate Power Series in Maple. Maple in Mathematics Education and Research 4th Maple Conference, MC 2020, Waterloo, Ontario, Canada, (48 - 66). Springer, Cham,
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12. Rui-Juan Jing*, Marc Moreno-Maza and Delaram Talaashrafi*. (2020). Complexity Estimates for Fourier-Motzkin Elimination. Lecture Notes in Computer Science vol. 12291. Computer Algebra in Scientific Computing (CASC) - 22nd International Workshop, (282--306). Springer, Germany
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Editors: Francois Boulier, Matthew England, Timur M. Sadykov and Evgenii V. Vorozhtsov

13. Alexander Brandt*, Robert H. C. Moir* and Marc Moreno-Maza. (2020). Employing C++ Templates in the Design of a Computer Algebra Library. Lecture Notes in Computer Science vol. 12097. Mathematical Software - ICMS 2020 - 7th International Conference, (342--352). Springer, Germany
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Editors: Anna Maria Bigatti, Jacques Carette, James H. Davenport, Michael Joswig and Timo de Wolff

14. Alexander Brandt*, Mahsa Kazemi* and Marc Moreno-Maza. (2020). Power Series Arithmetic with the BPAS Library. Lecture Notes in Computer Science vol. 12291. Computer Algebra in Scientific Computing - 22nd International Workshop, CASC 2020, (108--128). Springer, Germany
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15. Mohammadali Asadi*, Alexander Brandt*, Robert H. C. Moir*, Marc Moreno-Maza and Yuzhen Xie. (2020). On the parallelization of triangular decompositions. Proceedings of the 2020 ACM on International Symposium on Symbolic and Algebraic Computation. International Symposium on Symbolic and Algebraic Computation (ISSAC), (22--29). ACM, United States of America
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Editors: Ioannis Z. Emiris and Lihong Zhi

16. Mahsa Kazemi* and Marc Moreno-Maza. (2019). Detecting Singularities Using the PowerSeries Library. Communications in Computer and Information Science vol. 1125. Maple in Mathematics Education and Research - Third Maple Conference, (145--155). Springer, Germany
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Editors: Juergen Gerhard and Ilias S. Kotsireas

17. Zhongwen Zhang*, Dmitrii Marin*, Egor Chesakov*, Marc Moreno-Maza, Maria Drangova, Yuri Boykov. (2019). Divergence Prior and Vessel-Tree Reconstruction. IEEE Conference on Computer Vision and Pattern Recognition (CVPR), (10216--10224). Computer Vision Foundation / IEEE, United States of America
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18. Svyatoslav Covanov*, Davood Mohajerani*, Marc Moreno-Maza and Lin-Xiao Wang*. (2019). Big Prime Field FFT on Multi-core Processors. Proceedings of the 2019 International Symposium on Symbolic and Algebraic Computation. International Symposium on Symbolic and Algebraic Computation (ISSAC), (106--113). ACM, United States of America
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Editors: James H. Davenport, Dongming Wang, Manuel Kauers and Russell J. Bradford

19. Rui-Juan Jing* and Marc Moreno-Maza. (2019). The Z_Polyhedra Library in Maple. Communications in Computer and Information Science vol. 1125. Maple in Mathematics Education and Research - Third Maple Conference, (132--144). Springer, Germany
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Refereed?: Yes, Invited?: No
Editors: Juergen Gerhard and Ilias S. Kotsireas

20. Ana C. Camargos Couto*, Marc Moreno-Maza, David Linder, David J. Jeffrey and Robert M. Corless. (2019). Comprehensive LU Factors of Polynomial Matrices. Lecture Notes in Computer Science vol. 11989. Mathematical Aspects of Computer and Information Sciences - 8th International Conference, MACIS 2019, (80--88). Springer, Germany
Paper
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Refereed?: Yes, Invited?: No
Editors: Daniel Slamanig, Elias P. Tsigaridas and Zafeirakis Zafeirakopoulos

21. Mohammadali Asadi*, Alexander Brandt*, Robert H. C. Moir* and Marc Moreno-Maza. (2018). Sparse Polynomial Arithmetic with the BPAS Library. Lecture Notes in Computer Science vol. 11077. Computer Algebra in Scientific Computing - 20th International Workshop, CASC 2018, (32--50). Springer, Germany
Paper
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Refereed?: Yes, Invited?: No
Editors: Vladimir P. Gerdt, Wolfram Koepf, Werner M. Seiler and Evgenii V. Vorozhtsov

22. Rui-Juan Jing*, Marc Moreno Maza. (2017). Computing the Integer Points of a Polyhedron, II: Complexity Estimates. Lecture Notes in Computer Science, vol 10490. International Workshop on Computer Algebra in Scientific Computing (CASC), (242-256). Springer, Germany
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## Intellectual Property

### Patents

1. OPTIMIZING PROGRAM PARAMETERS IN MULTITHREADED PROGRAMMING. United States of America. US 10,901,713 B2. 2019/04/04.
Patent Status: Granted/Issued
Year Issued: 2021
Inventors: Alexander Brandt, Marc Moreno Maza, Jeeva Paudel and Lin-Xiao Wang