

ALLEGATO B

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3979

[Michela Ceria] CURRICULUM VITAE

INFORMAZIONI PERSONALI (NON INSERIRE INDIRIZZO PRIVATO E TELEFONO FISSO O CELLULARE)

COGNOME	CERIA
NOME	MICHELA
DATA DI NASCITA	[03,07,1984]

Michela Ceria

About Me Born in Biella, Italy; 3 July 1984.

Current position: postdoc at the Department of Computer Science - University of Milan, Italy, from may 2018.

Title of the position: Advanced methods and technologies in Computer Science.

Academic positions

May 2018 - · University of Milan, Italy ·

Department of Computer Science · *Postdoc position:* Advanced methods and technologies in Computer Science.

May 2017 - April 2018. · University of Trento, Italy ·

Department of Mathematics · *Postdoc position:* Algebraic Cryptography and Theory of Cyclic Codes.

April 2015 - April 2017 · University of Trento, Italy ·

Department of Information Engineering and Computer Science · *Postdoc position:* Algebraic Cryptography for Online Courses

Education

2011-2013 · University of Turin, Italy ·

PhD in Mathematics, XXVI cycle, University of Turin. · Scientific field MAT02-Algebra.

PhD degree obtained on February 14, 2014 (University of Turin).

Title of PhD Thesis: *Combinatorial structure of monomial ideals*.

Description: In the thesis we study *monomial ideals* from a combinatorial point of view, mainly dealing with their Groebner escalier. Many links with coding theory and enumerative combinatorics are provided. Moreover, the code of some related software is attached to the thesis.

Developed with Professors: M.G. Marinari, T. Mora, M. Roggero.

2007-2010 · University of Turin, Italy ·

Master degree in Mathematics · Class: 45/S (class of Mathematics Masters of Science, D.M. 509/1999), Faculty of Mathematical, Physical and Natural Science, University of Turin · Master degree obtained on July 20, 2010 with grade 110/110 cum laude and mention.

Title of MSc Thesis: *Conductor and adjoints of algebraic curves*.

Description: The thesis focuses on the several definitions of *adjoint curve*, distinguishing them and highlighting their reciprocal relationships. Additionally, a software classifying adjoint curves is developed and its pseudocode attached to the thesis, with some significant examples.

Developed with Professors: M. Roggero and P. Valabrega.

2003-2007 · University of Turin, Italy ·

Bachelor degree in Mathematics · Faculty of Mathematical, Physical and Natural Science, University of Turin · Bachelor degree obtained on April 27, 2007 with grade 104/110.

Title of Bachelor Thesis: *Matroids and parking functions*.

Description: This thesis deals with graph theory and, more precisely, with the theory of *matroids*. After a theoretical overview, it gives a practical application, examining its connection with *parking functions*.

Developed with Professor M. Roggero.

Awards and Scholarships

French qualification

Qualification to the function of *Maître de Conférences in Mathematics* (11/02/2015, number 15225277843) and *Applied Mathematics* (04/02/2015, number 15226277843).

2011-2013 · PhD scholarship

Three-year PhD Scholarship, funded by INdAM (National Institution of High Mathematics). INdAM Tutor for the scholarship: Professor A. Verra.

May-November 2012 · Regional fundings

Regional fundings for the visiting period in Kaiserslautern (Germany).

Organized Conferences

Widecom2019

Local Chair and member of the Technical Committee for the conference Widecom2019

One-day workshops

Being an assistant of Professor Massimiliano Sala, I contributed to the organization of

- the one-day workshop on *Blockchain and Innovative Applications*, 10th February 2017
- the one-day workshop on *Cryptographic Aspects of Cloud and Distributed Computing*, 28 October 2016

MEGA 2015

Being an assistant of Professor Massimiliano Sala, I contributed to the local organization of the international conference MEGA 2015 Effective Methods in Algebraic Geometry, University of Trento, Italy; June 15 – 19, 2015.

Miniworkshop Coding Theory and Cryptography

Organization of the miniworkshop *Coding Theory and Cryptography*, 13th and 14th October 2014, University of Turin. · In collaboration with Doctor Chiara Marcolla (University of Trento).

Referee

Journals and conferences

I have been a referee for the journals *AAECC* (Applicable Algebra in Engineering, Communication and Computing) and *JSC* (Journal of Symbolic Computation); moreover I have been a referee for the conferences *ISSAC* (International Symposium on Symbolic and Algebraic Computation), *MEGA* (International conference On Effective Methods in Algebraic Geometry) and *WTSC* (Workshop on Trusted Smart Contracts).

Reviews

Zentralblatt Math · 2013-Today

Reviewed papers:

- C. Chen, J.H. Davenport, M.M Maza, B. Xia, R. Xiao, *Computing with semi-algebraic sets: relaxation techniques and effective boundaries*. *J. Symb. Comput.* 52, 72-96 (2013).
 C. Dönch, *Characterization of relative Gröbner bases*, *J. Symb. Comput.* 55, 19-29 (2013).
 Christian Bopp, *Syzygies of 5-Gonal Canonical Curves*, *Documenta Mathematica* 20 (2015) 1055–1069.

Mathematical Reviews · 2017-Today

Reviewed papers:

- Levandovsky, Viktor et al., *A factorization algorithm for G-algebras and its applications*, *J. Symbolic Comput.* 85 (2018)
 Huishi Li, *An elimination lemma for algebras with PBW bases*, *Communications in Algebra* 2018, VOL. 46, NO. 8, 3520–3532 <https://doi.org/10.1080/00927872.2018.1424863>

Research groups

European Women in Mathematics

Member from 2019.

UMI · National Mathematical Union

Member from 2018.

De Componendis Cifris · National association in Cryptography

Member from its foundation in Autumn 2017.

GNSAGA · National Group for Algebraic and Geometrical structures and their Applications

Member from 2012.

Singular Team ·

I am member of the Singular Team as a developer from 2012.

Visiting

Linz

I have been invited, both for a seminar and for research purpose, to the University of Linz by Prof. M. Kauers for the period 10-15 December 2018.

Kaiserslautern

During the period May-November 2012, I have been visiting scholar in *University of Kaiserslautern* (Germany) for short periods and worked with Professors W. Decker and H. Schoenemann. I implemented two libraries for the software Singular, which have been integrated in version 3-1-6 of the software.

<http://www.singular.uni-kl.de/index.php/singular-devteams.html>.

Moreover, I followed some courses on computational algebraic geometry.

References

Prof. T. Mora

University of Genoa - 5919@unige.it

Prof. B. Buchberger

Research Institute for Symbolic Computation (RISC) Johannes Kepler University -
bruno.buchberger@risc.jku.at

Scientific Collaborations

Italy

Professors M.G. Marinari (University of Genoa), T. Mora (University of Genoa), M. Roggero (University of Turin), M. Sala (University of Trento), F. Cioffi (University of Naples), P. Valabrega (Polytechnic of Turin), A. Visconti (University of Milan). Doctors M. Bonini (University of Trento), C. Marcolla (University of Trento) and F. Pintore (University of Trento).

Foreign countries

Professors W. Decker (University of Kaiserslautern) and H. Schoenemann (University of Kaiserslautern).

Students

Bachelor

I collaborated with Professor P. Valabrega (Polytechnic of Turin) as Bachelor Thesis co-advisor for four students. Now, I am cooperating with Professor A. Visconti as a Bachelor Thesis co-advisor for five students and with Professor T. Mora for another one.

Master

I collaborated with Professor M. Sala as Master Thesis co-advisor for four students (one in collaboration with Dr. J. Shokrollahi of Bosh GmbH)

I collaborated with Dr. G. Rinaldo as Master Thesis co-advisor for one student.

Tutoring

I have been tutor of 14 students, studying in the *Major Coding Theory and Cryptography* (now called only *Cryptography*) of the Master of Degree in Mathematics at University of Trento, helping them with their study plans, average grade and in deciding about their internships in companies.

Conferences, Schools, Seminars (invited speaker)

Seminar · 13 December 2018 ·

Invited by University of Linz.

Title of the talk: *DIY for Groebner bases: multivariate Ore extensions and effective rings.*

Seminar · 5 December 2018 ·

Invited by University of Genoa.

Title of the talk: *DIY for Groebner bases: multivariate Ore extensions.*

Seminar · 4 December 2018 ·

Invited by University of Genoa.

Title of the talk: *Bitcoin, blockchain and their applications.*

Seminar · 27 March 2018 ·

Invited by CTI Liguria for a seminar at Palazzo Ducale, Genoa.

Title of the talk: *La crittografia dietro Bitcoin e blockchain.*

Seminar · 20 December 2017 ·

Invited for a seminar at University of Genoa.

Title of the talk: *Combinatorics of involutive divisions.*

Seminar · 19 December 2017 ·

Invited for a seminar at University of Genoa.

Title of the talk: *Bitcoin, Blockchain e loro Applicazioni.*

Conference · 26-27 October 2017 ·

Invited speaker to the *2nd Number Theory Meeting - Turin*, Polytechnic of Turin
Title of the seminar: *Groebner bases and ECDLP: Involution*.

Conference · June 2017 ·

Invited speaker at *Theory and Computation in Algebra and Algebraic Geometry with a dedication to Paolo Valabrega on the occasion of his 70(+2)th Birthday*, University of Turin
Title of the talk: *Combinatorics of involutive divisions*

Conference · June 2014 ·

Invited speaker at the conference *Giornate di Geometria Algebrica ed Argomenti Correlati XII*, Salone d'Onore del Castello del Valentino, Turin.
Title of the talk: *Basi involutive "Term-ordering free"* (Term-ordering free involutive bases).

Conferences, Schools, Seminars (speaker/poster)

Summer School · August 2018 ·

Participation to the poster session of *AEC 2018 - RISC*, Linz, Austria.
Title of the poster: *Combinatorics of ideals of points: a Cerlienco-Mureddu-like approach for an iterative lex game*.

Conference · 24-27 July 2018 ·

Participation as speaker to *ICMS 2018 - Notre Dame*, Indiana, USA.
Title of the talk: *Efficient computation of squarefree separator polynomials*.

Conference · June 2018 ·

Participation as speaker to *ACA 2018 - session Algorithms for zero-dimensional ideals - Santiago de Compostela* – Spain.
Title of the talk: *Combinatorics of ideals of points: a Cerlienco-Mureddu-like approach for an iterative lex game*.

Conference · April 2018 ·

Participant to the poster session of the conference *Symmetry and Computation*, CIRM - Luminy - Marseille.
Title of the poster: *Combinatorics of involutive divisions*

Seminar · September 2017 ·

Findomestic, Florence
Lecturer of a seminar titled: *Introduzione alla tecnologia blockchain ed alle sue principali applicazioni* (Introduction to blockchain technology and its main applications).

Conference · June 2017 ·

Participation as speaker to *MEGA 2017. Effective methods in Algebraic Geometry*, University of Nice, France.
Title of the talk: *Bar Code for monomial ideals*

Seminar · November 2016 ·

Speaker to the miniworkshop *Seminari di Teoria dei Numeri*
Title of the seminar: *Half Error Locator Polynomial for binary cyclic codes*.

Seminar · April 2016 ·

SGS, Verona
Lecturer of a seminar titled: *E-Voting e Blockchain*.

Seminar · May 2016 ·

Polytechnic of Turin
Title of the talk: *Crittografia e sicurezza del sistema Bancomat* (Cryptography and security of the Bancomat system).

Summer School · July 2015 ·

Participation to the poster session of the summer school *AEC, 2nd Algorithmic and Enumerative Combinatorics Summer School 2015*
Title of the poster: *Bar Codes and Strongly Stable Ideals*.
Participation to the summer school.

Summer School and Conference · July 2015 ·

Speaker at the conference *Current Trends on Groebner Bases*, Osaka, Japan.
Title of the talk: *A unifying form for noetherian polynomial reductions*.
Funded by INdAM.
Participation to the summer school.

Miniworkshop · 13-14 October 2014 ·

Speaker at the miniworkshop *Coding Theory and Cryptography*, Department of Mathematics, University of Turin.

Title of the talk: *Polinomi locatori sparsi per codici ciclici binari* (Sparse locator polynomials for binary cyclic codes).

Seminar · April 2014 ·

Polytechnic of Turin

Title of the talk: *Basi involutive "Term-ordering free"* (Term-ordering free involutive bases).

Conference · June 2013 ·

Participation to the poster session of the convention *MEGA 2013. Effective methods in Algebraic Geometry*, University of Frankfurt, Germany.

Title of the poster: *JMBTest.lib and JMSConst.lib: Singular Tools for J-Marked Schemes*.

Summer School · June 2013 ·

EACA'S Second International School On Computer Algebra and Applications, University of Valladolid, Spain.

Lecturer of a seminar titled: *Bar-codes for monomial ideals*.

Participation to courses.

Seminar · December 2012 ·

Polytechnic of Turin

Title of the talk: *L'Asse del Male* (The Axis-of-Evil Theorem).

Summer School · October 2012 ·

Algebra for Secure and Reliable Communication Modeling, Institute of Physics and Mathematics of the University of Michoacán, Mexico.

Lecturer of a seminar titled: *The Axis-of-Evil Theorem*.

Participation to courses.

Conference · September 2012 ·

Participation as a speaker to the convention *MAP 2012 - Mathematics, Algorithms and Proofs*, University of Konstanz, Germany.

Title of the seminar: *The Axis-of-Evil algorithm*.

Participation to the 'Young Researchers' Session' with a brief talk on my research activities.

Summer School · July-August 2012 ·

PHD School on Groebner Bases, Curves, Codes and Cryptography, University of Trento.

Lecturer of a seminar titled: *A Bar-Code algorithm for the 'Axis of Evil' Theorem*.

Participation to courses.

Summer school · October 2011 ·

Summer school · October 2011 · International School on Computational Commutative Algebra and Algebraic Geometry, Villa Pace-University of Messina.

Lecturer of a seminar titled: *Classification of Adjoint Curves*.

Participation to courses.

Followed Conferences and Schools

Conference · June 2017 ·

Participation to *Fq13 - The 13th International Conference on Finite Fields and their Applications*, Gaeta.

Conference · April 2015 ·

Participation to *The Ninth International Workshop on Coding and Cryptography 2015*, Paris.

Conference · March 2012 ·

Participation to the conference *Geometria delle varietà algebriche* in honour of Professor A.Conte, Department of Mathematics, University of Turin.

Conference · April 2011 ·

Participation to the *Commutative Days in Turin, a meeting in honour of Silvio Greco on the occasion of his 70th birthday*, Department of Mathematics, Polytechnic of Turin.

Conference · October 2011 ·

Participation to the *Mathematica 5th User Group Meeting*, Department of Mathematics, University of Turin.

Research Interests

Combinatorial aspects of Computational Algebra

In my PhD Thesis I deeply examined the combinatorial structure of monomial ideals. In particular, I dealt with the combinatorial algorithms computing the lexicographical Groebner escalier of a zerodimensional radical ideal (Cerlienco-Mureddu Correspondence, Lex Game).

Moreover, I studied Marinari-Mora's Axis of Evil Theorem, giving a constructive proof of their theorem.

I introduced a compact and visual representation of monomials, called *Bar Code diagram*, which allows to read many properties of monomial ideals.

In particular I proved, using Bar Codes, that there exists a biunivocal correspondence between strongly stable ideals in $n = 2, 3$ variables, with a constant affine Hilbert polynomial p and some special plane partitions of the integer p .

I also generalized such a construction to stable ideals and I gave a conjecture on the special shape of the partitions that would have to be used in order to study the case of stable and strongly stable ideals in $n > 3$ variables

Moreover I worked to the classification of all involutive divisions which can be defined on the set of all term of a given degree (relative involutive divisions). Once fixed a relative involutive division, we constructed a directed graph, whose nodes are the vertices of the distinct (relative) involutive cones and whose edges allow to construct ideals (and the corresponding escaliers) generated in that degree, complying with the cones structure induced by the relative involutive division, in the sense that if a term is in the ideal, all the terms that we reach walking backwards in the graph must belong to the ideal as well, whereas if a term is in the escalier, all those we reach walking forward in the graph must belong to the escalier.

Together with Prof. Teo Mora, we developed an iterative algorithm for determining the lexicographical Groebner escalier associated to a finite set of distinct points, which keeps Cerlienco-Mureddu iterativity while having a very good complexity, similar to that of the Lex Game. Such an algorithm is based on an efficient use of a point trie and of the Bar Code. We have also developed an efficient algorithm to compute squarefree separator polynomial and Ausinger-Stetter matrices. The separator's algorithm has already been implemented (collaboration with Professors Teo Mora and Andrea Visconti) and the related extended abstract accepted at the International Congress on Mathematical Software.

I have just submitted a paper in which Janet-like division is studied by means of Bar Codes.

Noncommutative Groebner bases

I am interested in the theory of non-commutative Groebner bases. Together with Professor T. Mora we studied algorithms aimed to compute Groebner bases for multivariate Ore extensions, presented as modules over PIDs. We used as a tool the characterization of Buchberger test given by Moeller Lifting Theorem. Studying the notion of restricted Groebner basis due to Weispfenning, we introduced the notion of Weispfenning multiplication, which allows to "commutivize" the computation of restricted bilateral ideals; using that we were able to give a more efficient alternative to Mora's algorithm for computing Groebner bases over any effective ring.

Currently, we are working together to the extension to effective algebras of the theory of involutive bases, given the Groebner algorithmic structure. In particular, we have just submitted a paper on weak involutive bases over effective rings defined over skew fields and we are working on the relaxed hypothesis of having effective rings defined over principal ideal domains.

Computational Algebraic Geometry and Commutative Algebra

In my Master of Science's Thesis, written under the direction of Professors Margherita Roggero (University of Turin) and Paolo Valabrega (Polytechnic of Turin), I studied the theory of *Adjoint Curves* from a computational point of view.

More precisely, I examined the five different definitions of adjoint curves and I focused on their reciprocal relations. Moreover, I studied the notions of *special* adjoint and *true* adjoint and the definition of conductor ideal.

Furthermore, I developed and implemented an algorithm that allows to discriminate whether or not a curve is adjoint to another, according to the various definitions, and that computes the conductor ideal.

Given a monomial ideal $J \triangleleft P$ I worked in collaboration with Professors Teo Mora and Margherita Roggero on the characterization for $\text{Mf}(J)$, family of all homogeneous ideals $I \triangleleft P$ s.t. P/I is a free A -module with basis $N(J)$, i.e. the Groebner escalier of J . We have been basing on Janet-Riquier decomposition for sets of terms and we have defined a noetherian reduction process à la Buchberger. We also submitted a paper which presents a general definition of polynomial reduction structure, studies its features and highlights the aspects needed in order to grant and to efficiently test the main properties (noetherianity, confluence, ideal membership).

Coding Theory

I am dealing with Cooper's philosophy for decoding cyclic codes, i.e. *decoding by means of Groebner bases*. More precisely, I am studying Sala-Orsini *general error locator polynomial* from an interpolation point of view. Following a suggestion by Prof. M.Sala, I gave a decoding procedure for cyclic codes, which is polynomial, instead of the current exponential one; we are still working on completing a formal proof of correctness. In the same time, we are trying to give a *general description* of the general error locator polynomial in order to prove its sparsity using the ideas by Chong-Dao Lee. Together with Professors M. Baldi and A. Visconti, we are working to the codes preserving CD-rom's information from erasures, as time passes by.

Elliptic Curve Cryptography

Together with Prof. M. Sala, Prof. A. Visconti and Dr. F. Pintore, we are studying an attack on the discrete logarithm problem for elliptic curves by means of Groebner bases and Semaev's summation polynomials.

Blockchain and applications

Together with Prof. A. Visconti and Dr. C. Lepore we are writing a survey on blockchain consensus protocols and together with Prof. A. Visconti a paper on lotteries' protocols over Bitcoin blockchain.

Teaching Experience - University courses

September 2017 -December 2017 ·

Master Degree in Mathematics · Lecturer for the Advanced Coding Theory and Cryptography course taught on the second year of the Master Degree in Mathematics, Major in Coding Theory and Cryptography, University of Trento
Professor: Prof. M. Sala.

September - December 2016 ·

Master Degree in Mathematics · Lecturer for the Cryptography course taught on the first year of the Master Degree in Mathematics, Major in Coding Theory and Cryptography, University of Trento
Professor: Prof. M. Sala.

April 2016 ·

PhD in Mathematics · Assistant Lecturer for the PhD course *Groebner Bases applied to Cryptography and Coding Theory*, University of Trento
Professor: Prof. M. Sala.

September - December 2015 ·

Master Degree in Mathematics · Lecturer for the Cryptography course taught on the first year of the Master Degree in Mathematics, Major in Coding Theory and Cryptography, University of Trento
Professor: Prof. M. Sala.

2013-2014 ·

Bachelor in Engineering · Lecturer for the Geometry course taught on the first year of the bachelor in Engineering, Politecnico di Torino.
Professor: Prof. G. Casnati.

2011-2013 ·

Bachelor in Engineering · Lecturer for the Geometry course taught on the first year of the bachelor in Engineering, Politecnico di Torino.
Professor: Prof. C. Massaza.

Teaching Experience - courses for professionals

November 2017 ·

Lecturer for the course *B Monero: the dark side of cryptocurrencies*
Professor: Prof. M. Sala.

October 2017 ·

Lecturer for the course *Bitcoin, Blockchain and their new frontiers in Milan*
Professor: Prof. M. Sala.

May 2017 ·

Lecturer for the course *Bitcoin, Blockchain and their new frontiers in Trento*
Professor: Prof. M. Sala.

November 2016 ·

Assistant Lecturer for the courses *Bitcoin, Blockchain and their new frontiers in Milan*,
Bitcoin, Blockchain and their new frontiers in Rome.
Professor: Prof. M. Sala.

September 2016 ·

· Assistant Lecturer for the course *Bitcoin, Blockchain and their new frontiers II*, University of Trento
Professor: Prof. M. Sala.

May 2016 - May 2017 ·

Assistant Lecturer for the course *Bitcoin, Blockchain and their new frontiers*, University of Trento
Professor: Prof. M. Sala.

Teaching Experience - e-learning and courses' coordination

Course coordination 2018 - today ·

Coordination for the blended course in Computer Science for the faculty of Linguistic Mediation.

E-learning 2015 - 2018

I assisted Prof. Massimiliano Sala in the preparation of the teaching material and in the organization of the two one-day face-to-face events of the EIT online course *Applications of Cryptography to Security and Privacy* and in the preparation of the teaching material for the online course *BoAB: Bitcoin and other Applications of Blockchain*. I have maintained the online platform of the latter course and done the tutoring for the participants until April 2018.

Teaching Experience - experience at school

November 2014 ·

Liceo Istituto Comprensivo S. Francesco d'Assisi – Biella · Brief mathematics substitute teaching.

Summer 2014 ·

Liceo Giuseppe & Quintino Sella – Classico Linguistico Artistico · Mathematics recovery course.

Publications

2019

A general framework for Noetherian well ordered polynomial reductions

In press in *Journal of Symbolic Computation*, <https://doi.org/10.1016/j.jsc.2019.02.002>

Authors: Michela CERIA, Teo MORA, Margherita ROGGERO

2019

Bar code for monomial ideals.

Journal of Symbolic Computation, DOI: <https://doi.org/10.1016/j.jsc.2018.06.012>

Volume 91, March - April 2019, Pages 30-56, *Journal of Symbolic Computation* Author: Michela CERIA

2018

Combinatorics of ideals of points: a Cerlienco-Mureddu-like approach for an iterative lex game (abstract)

DOI: <http://dx.doi.org/10.15304/978841695487> In 24th Conference on Applications of Computer Algebra - ACA 2018: Proceedings, Applications of Computer Algebra, Santiago de Compostela, Spain, June 18-22, 2018. Authors: Michela CERIA, Teo MORA

2018

Combinatorics of ideals of points: a Cerlienco-Mureddu-like approach for an iterative lex game (extended abstract)

International Conference Polynomial Computer Algebra '2018 St. Petersburg, Russia April 16-21, 2018 International Euler Institute - ISBN 978-5-9651-1141-1 Authors: Michela CERIA, Teo MORA

2018

Efficient computation of squarefree separator polynomials (extended abstract)

DOI: https://doi.org/10.1007/978-3-319-96418-8_12 In: Davenport J., Kauers M., Labahn G., Urban J. (eds) Mathematical Software – ICMS 2018. ICMS 2018. Lecture Notes in Computer Science, vol 10931. Springer, Cham Authors: Michela CERIA, Teo MORA, Andrea VISCONTI.

2017

Buchberger-Zacharias Theory of Multivariate Ore Extensions.

DOI: <https://doi.org/10.1016/j.jpaa.2017.02.011> *Journal of Pure and Applied Algebra*, Volume 221, Issue 12, December 2017, Pages 2974–3026. Authors: Michela CERIA, Teo MORA

2017

Bitcoin, la moneta virtuale per transazioni reali, Interlex, may 2017. Authors: M. CERIA, M.SALA

2016

Buchberger-Weispfenning Theory for Effective Associative Rings.

DOI: <https://doi.org/10.1016/j.jsc.2016.11.008> *Journal of Symbolic Computation*, special issue for ISSAC 2015, 83, pp. 112-146. Authors: Michela CERIA, Teo MORA

2016

Bitcoin e Blockchain, Authors: Michela CERIA, Federico PINTORE, Massimiliano SALA Aused Informa, 98.

2016

A computational approach to the theory of adjoints.

DOI: <http://dx.doi.org/10.1478/AAPP.942A7> *AAPP Atti della Accademia Peloritana dei Pericolanti, Classe di Scienze Fisiche, Matematiche e Naturali*, Volume 94, Issue 2, 2016, Article number A7. Author: Michela CERIA

2015

Term-ordering free involutive bases, Authors: Michela CERIA, Teo MORA, Margherita ROGERO

DOI: [10.1016/j.jsc.2014.09.005](https://doi.org/10.1016/j.jsc.2014.09.005), *Journal of Symbolic Computation*, Volume 68, Part 2, May–June 2015, Pages 87–108.

2014

A proof of the “Axis of Evil theorem” for distinct points.

Author: Michela CERIA · *Rendiconti del Seminario Matematico dell'Università e del Politecnico di Torino*, Vol. 72 No. 3-4, pp. 213-233 (2014)

Other accepted works

2018

Combinatorial decompositions for monomial ideals (extended abstract), accepted for the poster presentation at MEGA2019

Authors: Michela CERIA.

2018

Combinatorics of ideals of points: a Cerlienco-Mureddu-like approach for an iterative lex game Accepted for a talk at the conferences ACA 2018 and PCA 2018 Authors: Michela CERIA, Teo MORA.

2017

On the discrete logarithm problem for prime-field elliptic curves Accepted for a computation presentation at MEGA 2017. Authors: Alessandro AMADORI, Michela CERIA, Federico PINTORE, Massimiliano SALA

Submitted works

2019

Applications of Bar Code to involutive divisions and a greedy algorithm for complete sets., Author: Michela CERIA

2019

Weak Involutive bases over effective rings, submitted to ISSAC2019, Authors: Michela CERIA, Teo MORA

2019

Bar Code and Janet-like division, submitted to ISSAC2019, Author: Michela CERIA

2018

Efficient computation of squarefree separator polynomials, submitted to Mathematics in Computer Science

Authors: Michela CERIA, Teo MORA, Andrea VISCONTI.

2018

Bar code: a visual representation for finite set of terms and its applications, submitted to Mathematics in Computer Science Author: Michela CERIA

2018

A Combinatorics of ideals of points: a Cerlienco-Mureddu-like approach for an iterative lex game. Submitted to Journal of Pure and Applied Algebra Authors: Michela CERIA, Teo MORA

Available in Arxiv

2017

Combinatorics of involutive Divisions Available in Arxiv arXiv:1707.02452 [math.AC] Author: Michela CERIA

In preparation

Book

Bits, bytes and friends Authors: M. CERIA, G. RINALDO and M. SALA

2018

Towards involutive bases for effective algebras, Authors: Michela CERIA, probably in cooperation with Teo MORA

2018

A variant of the iterative Moeller algorithm for giving Pommaret basis and its factorization, Author: Michela CERIA

2018

Bar Code and Janet trie, Author: Michela CERIA

Distributed software

2012

JMBTest.lib: a J-marked basis tester

Library available from Singular 3-1-6:

<http://www.singular.uni-kl.de/index.php/singular-download.html>

Author: Michela CERIA

2012

JMSConst.lib: a J-marked schemes constructor

Library available from Singular 3-1-6:

<http://www.singular.uni-kl.de/index.php/singular-download.html>

Author: Michela CERIA

Submitted software

2015

AffMarkedSchemes.lib

Prototype library for Singular which performs Affine Marked Schemes computation.

Submitted to Singular Team. Author: Michela CERIA

Foreign languages

Italian

Mothertongue

English

Good

International English Language Testing System (Academic), got in September 2010 with grade 7.

French

Scholastic; B1 MC Graw Hill certificate got online

Japanese

Scholastic

Software Development Skills

OS

- Linux (Ubuntu)
- Microsoft Windows
- Mac OS X
- Android

Programming

- C/C++
- Singular
- Magma

Softwares

- Singular
- Cocoa
- Maple
- Magma
- Microsoft Office
- Outlook
- Thunderbird
- Internet Explorer
- Mozilla Firefox
- Chrome/Chromium
- Safari
- Adobe reader
- Opera

E-learning

- Moodle
- Sakai
- Google Classroom

Other information

Lie Algebras course

followed the Lie algebra Course held by Prof. De Graaf to the PhD School in Mathematics at University of Trento.

Researchers' night

I participated to the italian researcher's night both in Turin and in Trento.

Data

22/02/2019

Luogo

Milano