Curriculum Vitae

• Personal ID:

Name	:	Abdolali BASIRI
Date of Birth	:	Sept. 11, 1969
Sex	:	Male
Marital Status	:	Married
Nationality	:	Iranian

• Work Address:

School of Mathematics and Computer Science,
Damghan University,
P.O.Box 36715/364,
Postal code: 3671641167,
Damghan, Iran.

Email: basiri@du.ac.ir
Telephone: +982335220297,
Fax: +982335220092,
Mobile: +989127325963.

• Education:

2000–2003
Ph. D. in Informatics, Sorbonne(Paris VI) University,
Thesis Title : *Gröbnerr basis and LLL Algorithm, Fast Arithmetic of C_{ab} Curves.*
Supervisors: J.-C. Faugère., D. Lazard.

19992–1994
Master of Science in Pure Mathematics, Tehran University, GPA: 17.07/20.0.
Thesis Title: Local Defining Ideal of a Generic Quadruple Point.
Supervisor: R. Zaare-Nahandi.

1987–1992
Bachelor of Science in Mathematics(application in computer), Ferdowsi University of Mashhad, GPA: 15.31/20.0.

• Teaching:

Calculus, Foundation of Mathematics, Algebra, Linear algebra, Computational aspects of commutative algebra, Computational aspects in algebraic geometry,

Maple, Computational complexity, Foundation of theoretical cryptography, Advanced algorithms

• Research Topics:

My main interests lie in polynomial system solving and its applications.

- **Conference Papers :**

1. A. Hamdipour, M. Z. Khormizi, **A. Basiri**, S. A. Mirjalili, *Solving the system of linear equations with WOA optimization algorithm*, Proceeding of 5^{th} seminar on nonlinear analysis and optimization (SANO 2022), Azarbaijan Shahid Madani University, May 19-20, 2022.

2. M. Riahi, **A. Basiri**, S. Rahmany and Felix Kübler *Applying Computer Algebra for Parametric Representation of the Steady States of Overlapping Generations Model*,Proceeding of 51^{st} Annual Iranian Mathematics Conference (AIMC51), Kashan University, February 15-20, 2021.

3. R. Damavandi khatir, **A. Basiri** and S. Rahmany, *Introducing the Z-Echelon algorithm to quickly compute Groebner basis of some ideals with one dimension* ,Proceeding of the second national congress on Mathematics and Statistics, Gonbad Kavous University, 20 February 2020.

4. R. Damavandi khatir, **A. Basiri** and S. Rahmany, *Computational aspects of positive dimensional ideals* ,Proceeding of International conference on commutative Algebra and its Interactions with Algebraic Geometry, Tabriz University, October 1-4 2019.

5. M. Riahi, **A. Basiri**, S. Rahmany and Felix Kübler, *Efficient Formulation of Gröbner Bases to Find The Economical Equilibria*,Proceeding of 50^{st} Annual Iranian Mathematics Conference (AIMC50), Shiraz University, August 26-29, 2019.

6. H. S. Jahromi, J.Mohamadi, M. Z. Khormizi, **A. Basiri**, *Differential Fauts Attacks on Leightweight Cipher LBlock*, Proceeding of 4^{th} International Conference on Combinatorics, Cryptography, Computer science and Computation (I4C2019), Iran University of Science and Technology, November 20-21, 2019.

7. F. Aminikhalafbadam, **A. Basiri** and S. Rahmany, *Universal Groebner basis of points*, Proceeding of the first national Conference on Mathematics and Statistic, Gonbad Kavoos University, May 10, 2018.

8. M. Riahi, **A. Basiri** and S. Rahmany, *Efficient Computation of Steady States of Logical Models of Biological Systems*, Proceeding of 7^{th} Conference on Bioinformatics, Tarbiat Modares University, January 3-5, 2018.

9. B. M.-Alizadeh, S. Rahmany and **A. Basiri**, *Efficient Determination of Dead Markings of Petri Nets in Systems Biology*, Proceeding of 7^{th} Conference on Bioinformatics, Tarbiat Modares University, January 3-5, 2018.

10. Sh. Fakouri, S. Rahmany and **A. Basiri**, *A new algorithm for computing SAGBI bases up to an arbitrary degree*, Proceeding of 25^{st} Iranian Algebra Seminar Hakim Sabzevari University, July 20-21, 2016.

11. M. Mirkarim, **A. Basiri** and S. Rahmany, *Numerical Approach For Solving Stiff Systems Using Gröbner Basis*, Proceeding of 25^{st} Iranian Algebra Seminar Hakim Sabzevari University, July 20-21, 2016.

12. M. Mirkarim, **A. Basiri**, S. Rahmany and B. M.-Alizadeh, *A New Approach to Obtain Infinitesimal Generators of Lie Symmetry Group of ODEs*, Proceeding of 47^{st} Annual Iranian Mathematics Conference (AIMC47), Kharazmi University, August 28-31, 2016.

13. Sh. Fakouri,, **A. Basiri**, S. Rahmany and B. M.-Alizadeh, *Some Improvements on Algebraic Representation of PDE Systems*, Proceeding of 47^{st} Annual Iranian Mathematics Conference (AIMC47), Kharazmi University, August 28-31, 2016.

14. **A. Basiri**, S. Rahmany, and M. Riahi, *A new algorithm to compute secondary invariants* , Proceeding of 46^{st} Annual Iranian Mathematics Conference, Yazd University, August 25–28, 2015.

15. B. M.-Alizadeh, S. Rahmany and **A. Basiri**, *An Efficient Computational Algebraic Method for Convex Polynomial Optimization* , Proceeding of 46^{st} Annual Iranian Mathematics Conference, Yazd University, August 25–28, 2015.

16. H. Harfshenu, H. Nosratipour, A. Hashemi Borzabadi, S. Rahmany and **A. Basiri**, *Global polynomial optimization via Gröbner Basis* , Proceeding of 45^{st} Annual Iranian Mathematics Conference, Yazd University, August 26–29, 2014.

17. M. Boroujeni, **A. Basiri**, and S. Rahmany *On Homogenization SAGBI-Gröbner Bases in Invariant Rings* The Workshop on Computational Differential Algebra and Related Topics, School of Mathematics, IPM, Tehran, June 21–25, 2014.

18. B. M.-Alizadeh, S. Rahmany and **A. Basiri** *Interval Gröbner Systems* The Workshop on Computational Differential Algebra and Related Topics, School of Mathematics, IPM, Tehran, June 21–25, 2014.

19. S. Rahmany, **A. Basiri** and N. Arabamery, *A Parametric Gröbner Basis Approach For Finding Solutions Of Interval Polynomials Systems*, Proceeding of 44^{st} Annual Iranian Mathematics Conference, Ferdowsi University of Mashhad, August 27–30, 2013.

20. M.S. Chaharbashloo, **A. Basiri** and S. Rahmany, *Some proofs of Geometrical theorems using Gröbner Basis*, 12^{st} Iranian Mathematics Education Conference, 3–6 September 2012.

21. F. Shahid and **A. Basiri**, *On the F_5 and F_5B algorithms*, The 9th Seminar on Commutative Algebra and Related Topics, Ferdowsi University of Mashhad, November 7-8, 2012.

22. S. Rahmany, **A. Basiri** and M. Mohaghegh nezhad, *A New Method For Solving Systems Of Polynomial Equations With Symmetry*, First National Conference on Computational Science, Damghan, Iran, Septembere 6-7, 2012.

23. M.S. Chaharbashloo, **A. Basiri** and S. Rahmany, *The Ansatz Approach in Quantum Mechanics using Gröbner Basis*, First National Conference on Computational Science, Damghan, Iran, Septembere 6-7, 2012.

24. H. Noori, **A. Basiri** and S. Rahmany, *Some Applications of Gröbner Bases*, Proceeding of International Conference on Computer, Electrical, and Systems Sciences, and Engineering, Paris, France, pages 141-144, July 27-29, 2011.

25. S. Rahmany, **A. Basiri** and H. Noori, *A New Algorithm for Computing Sagbi-Gröbner Bases*, Proceeding of 41^{st} Annual Iranian Mathematics Conference, University of Urmia, 12-15 September 2010.

26. **A. Basiri**, S. Rahmany and D. Khatibi, *A new implementation of Miura-Arita algorithm for Miura curves*, Proceeding of International Conference on Engineering and Technology, Penang, Malaysia, Pages 51–54, February 24-26, 2010.

27. S. Rahmany, **A. Basiri**, *Computing SAGBI-Gröbner Basis of Ideals of Invariant Rings by Using Gaussian Elimination*, Proceeding of International Conference on Engineering and Technology, Penang, Malaysia, Pages 55–58, February 24-26, 2010.

28. **A. Basiri**, M. Borujeny, *Chang the Ordering of Gröbner Bases from DRL Order to Lex Order in General Case with LLL Algorithm*, Proceeding of 40^{th} Annual Iranian Mathematics Conference, Sharif University of Technology, 17–20 Auguest 2009.

29. **A. Basiri**, *A New Method for Computing the Inverse Ideal in a Coordinate Ring*, Proceedings of 4th International Conference on Computer, Electrical, Systems Science and Engineering International Journal Of Mathematical, Physical and Engineering Sciences, pages 38 – 40, Bangkong, Thailand, 2007.

30. **A. Basiri**, *Formulae for arithmetic on non-hyperelliptic curves*, Proceeding of Algebraic Geometry and Geometric Modeling, Barcelona, Spain, Pages 37–39, September 2006.

31. **A. Basiri** and Ali Tahmasbi, *Arithmetic in the ideal class group; Some special cases*, *Proceeding of Computational and Mathematical Methods on Science and Engineering, Madrid, Spain, Pages 83–89, September 2006.*

32. **A. Basiri**, A. Enge, J.-C. Faugère, N. Gürel, *The Arithmetic of Jacobian Group of C_{34} Curves,* 16^{th} *Seminar on Algebra. IASBS, Zanjan, Iran, 17-19 November 2004.*

33. **A. Basiri** and J-C. Faugère, *Changing the ordering of Gröbner Bases with LLL: Case of Two Variables In J. Rafael Sendra, editor,* Proceedings of ISSAC (International Symposium in Symbolic and Algebraic Computation)*, pages 23–29. ACM Press, 2003.*

34. **A. Basiri**, *Arithmétique des Jacobiennes de courbes superelliptiques cubiques, Journée National de Calcul Formel, CIRM, Luminy, France, January 20-24, 2003.*

35. **A. Basiri**, *An Application of LLL Algorithme in Gröbner Basis, École Jeune Chercheurs en Algorithmique et Calcul Formel, Marne-La-Vallé, France, 31 Mars to 4 April 2003.*

• International invited talks :

1. **A. Basiri** *Fast Arithmetic for C_{ab} curves*, 2005 Workshop on Cryptography and Related Mathematics, Chuo University, Japan, 8-10 August 2005.

• Journal Papers :

1. E. Enayati, R. Mortazavi **A. Basiri**, J. Ghasemian, M. Moallem, *Time Series Anomaly Detection via Clustering-based Representation*, accepted in Evolving Systems Journal, 2023.

2. E. Enayati, R. Mortazavi **A. Basiri**, J. Ghasemian, M. Moallem, *A Novel Sliding Window- Based Model for Outlier Detection in Multivariate Time Series*, accepted in Soft Computing Journal, 2023.

3. Y. Behrouzi Y, **A. Basiri**, R. Pourgholi, AA. Kiaei, *Fusion of medical images using Nabla operator; Objective evaluations and step-by-step statistical comparisons.* , PLoS One. , 2023. doi = 10.1371/journal.pone.0284873. PMID: 37585476; PMCID: PMC10431637.

4. E. Enayati, R. Mortazavi **A. Basiri**, *Diagnosis Of Cardiac Arrhythmia Using cost-sensitive Deep learning* , accepted in Computing Science Journal , 2023.

5. M. Jalali, M. Zahedi, **A. Basiri**, *Deterministic solution of algebraic equations in sentiment analysis* , Multimedia Tools and Applications , 2023. doi = 10.1007/s11042-023-15140-3

6. M. Riahi, F Kuebler, **A. Basiri** and S. Rahmany, *Efficient Calculation of all Steady States in large-scale overlapping generations models* , Journal of Mathematics and Modeling in Finance, 2023. doi = 10.22054/jmmf.2023.71545.1083

7. F. Amini Khalafbadam, S. Rahmany, **A. Basiri**, M. Kreuzer, *Algorithm for computing all order ideals of ideals of points and its application in biological models* , Journal of Advanced Mathematical medeling , Volume 12(2), pages 304–315, 2022.

8. M. Jalali, M. Zahedi, **A. Basiri**, *A Concept for Weighting Sentiment Phrase Using Deterministic Solution of Algebraic Equations* , Turkish Journal of Electrical Engineering and Computer Sciences , Volume 30(5), pages 1773–1787, 2022.

9. M. B. Mirkarim, **A. Basiri**, and S. Rahmany, *Infinitesimal Generators of Lie Symmetry Group of Parametric Ordinary Differential Equations* , International Journal of Nonlinear Analysis and Applications, Volume 12(1), pages 877–891, 2021.

10. H. Harfsheno, **A. Basiri**, and S. Rahmany *Generalization of Buchberger's Algorithm with Respect to Several Orderings on Difference Modules* , Journal of Mathematical Researches, Volume 7(3), pages 513–526, 2021.

11. M. B. Mirkarim, **A. Basiri**, and S. Rahmany *Solving Stiff Systems using Symbolic - Numerical Method* , Computational Methods for Differential Equations, Volume 8(2), pages 282–293, 2020.

12. B. M.-Alizadeh, **A. Basiri**, and S. Rahmany *Applying Gröbner Basis Method to Multiparametric Polynomial Nonlinear Programming* , Bulletin of the Iranian Mathematical Society, Volume 45(6), pages 1585–1603, 2019.

13. S. Fakouri, S. Rahmany and **A. Basiri**, *A new algorithm for computing regular representations for radicals of parametric differential ideals*, Journal of Cogent Mathematics & Statistics, Volume 5(1), pages 1–21, 2018.

14. S. Fakouri, **A. Basiri** and S. Rahmany, *A new algorithm for computing SAGBI bases up to an arbitrary degree* , Volume 9(2), pages 215–221, International Journal of Nonlinear Analysis and Applications, 2018.

15. S. Rahmany, **A. Basiri** and B. Salehian Matikolaei, *New Algorithm For Computing Secondary Invariants of Invariant Rings of Monomial Groups* , Volume 49(2), pages 103–111, Journal of Algorithms and Computation, 2017.

16. B. M.-Alizadeh, S. Rahmany and **A. Basiri**, *Interval Grobner system and its applications* , Volume 26, pages 67-96, Reliable Computing, 2018.

17. M. Borujeni , **A. Basiri**, S. Rahmany and A. Valibouze, *Finding Solutions of Fuzzy Polynomial Equations Systems by an Algebraic Method* , Volume 30, pages 791–800, Journal of Intelligent and Fuzzy Systems, 2016

18. M. Borujeni , **A. Basiri**, S. Rahmany and A. Valibouze, *Solving Fuzzy Systems in Dual Form using Wu's Method*, Volume 17(2), pages 170–180, International Journal of Fuzzy Systems, 2015.

19. M. Borujeni , **A. Basiri**, S. Rahmany and A. Valibouze, *F_4-invariant algorithm for computing SAGBI-Gröbner Bases*, Theoretical Computer Science, Volume 573, Pages 54–62, 2015.

20. H. Farahani, S. Rahmany and **A. Basiri**, *Determining of Level Sets for a Fuzzy Surface Using Gröbner Basis*, International Journal of Fuzzy System Applications (IJFSA), Volume 4(2), pages 1–14, 2015.

21. H. Farahani, S. Rahmany, **A. Basiri**, and A. Abbasi Molai, *Resolution of a system of fuzzy polynomial equations using eigenvalue method*, Volume 19(2), pages 283–291, Soft Computing, 2014.

22. M.S. Chaharbashloo, **A. Basiri**, S. Rahmany and S. Zarrinkamar, *An Application of Gröbner Basis in Differential Equations of Physics*, Zeitschrift für Naturforschung,Volume 68, Pages 646–650, 2013.

23. A. Abbasi Molai, **A. Basiri** and S. Rahmany, *Resolution of a system of fuzzy polynomial equations using the Gröbner basis*, Information Sciences, Volume 220, pages 541-558, 2013

24. M. Borujeni , **A. Basiri**, S. Rahmany and A. H. Borzabadi, *A modified LLL Algorithm for Change of Ordering of Gröbner Basis*, International Journal of Nonlinear Analysis and Applications, Volume 4, Number 1, pages 59-65, 2013.

25. A. H. Borzabadi , **A. Basiri** and S. Rahmany, *Optimal Control of Fredholm Integral Equations with Polynomial Kernels Based on the Benefits of Gröbner Bases*, Journal of Advanced Research in Applied Mathematics, Volume 5, Issue 3, pages 29-40, 2013.

26. **A. Basiri** and S. Rahmany, *C_{ab} Curves: A quick short-cut*, TWMS Journal of Pure and Applied Mathematics , Volume 4, Number 1, pages 69-77, 2013.

27. S. Rahmany, **A. Basiri**, H. Farahani and A. H. Borzabadi, *A Gröbner basis approach for finding positive solution of fully fuzzy polynomial equations systems* , Journal of Intelligent and Fuzzy Systems, (25), pages 395-402, 2013.

28. **A. Basiri**, A. Enge, J.-C. Faugère and N. Gürel *The Arithmetic of Jacobian Groups of Superelliptic Cubics.* Mathematics of Computation, Volume 74, Number 249, pages 389-410, 2005.

29. **A. Basiri**, A. Enge, J.-C. Faugère and N. Gürel *Implementing the Arithmetic of $C_{3,4}$ Curves*, *Proceedings of ANTS (Algorithmic Number Theory Symposium)*, Lecture Notes in Computer Science, pages 87–101, Springer-Verlag, 2004.

- **Research Projects:**

1. Co-operator: S. Rahmany, Title: *An efficient Algorithm for computing Sagbi-Gröbner Basis,* Damghan University, N° 88/math/531/07 Iran, 2009.

2. Co-operator: J.-C. Faugère, Title: *Changing the ordering of Gröbner Bases with LLL: Case of Two Variables,* INSTITUT NATIONAL DE RECHERCHE EN INFORMATIQUE ET EN AUTOMATIQUE, N° 4746, France, 2003.

3. Co-operators: A. Enge, J.-C. Faugère and N. Gürel, Title: *The arithmetic of Jacobian groups of superelliptic cubics,* INSTITUT NATIONAL DE RECHERCHE EN INFORMATIQUE ET EN AUTOMATIQUE, N° 4618, France, 2002.

- **Experiences:**

1. Associate Professor: 2016– , Damghan University

2. Assistant Professor: 2004-2016, Damghan University

3. President of Damghan university, 2014 – 2022

4. Chairman of International and Scientific Cooperation Office (Damghan university), 2010 – 2014

5. Vice chancellor in education affairs(Damghan university), 2006 – 2010

6. Dean of school of Mathematics and Computer Science(Damghan university), 2004 – 2006

7. Lecturer: 1995-1999, Damghan University