

Curriculum Vitae

PERSONAL DATA

Name: Ali Akbar
Last Name: YAZDAN POUR
Last updated: October, 2023
Date of Birth: 11 September 1981
Birth Place: Qaemshahr, Mazandaran, Iran
Citizen: Iranian
Status: Married



CURRENT ADDRESS:

Department of Mathematics,
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EDUCATION:

FROM	TO	NAME OF INSTITUTION	CITY AND COUNTRY	TYPE OF CERTIFICATE
09/1995	06/1999	ABOUREYHAN	Jouybar/ IRAN	DIPLOMA OF MATHEMATICS PHYSICS
09/2000	06/2004	SHIRAZ UNIVERSITY	Shiraz/ IRAN	B.Sc. IN APPLIED MATHEMATICS
09/2004	08/2007	IASBS	Zanjan/ IRAN	M.Sc. IN MATHEMATICS
09/2007	10/2012	IASBS and UJF	Zanjan/ IRAN Grenoble/ FRANCE	Ph.D. IN MATHEMATICS

THESIS

- **Master Thesis:**
Simplicial Complexes and Their Cohen-Macaulay Properties
Supervisor: Rashid Zaare-Nahandi
- **PhD Thesis:**
Resolution and Castelnuovo-Mumford Regularity
Supervisors: Marcel Morales
Rashid Zaare-Nahandi

POSITIONS

- Assistant Prof. of Mathematics at Institute for Advanced Studies in Basic Sciences (IASBS), Zanjan, Iran (2013-present)

RESEARCH INTERESTS:

- Commutative Algebra and Algebraic Geometry.
- Computational aspects of commutative algebra and algebraic geometry.
- Combinatorial commutative algebra.

LIST OF PUBLICATIONS:

- (With S. Faridi, M. Farrokhi and R. Ghorbani), *Cellular resolutions of monomial ideals and their Artinian reductions*,. to appear in J. Pure and Applied Algebra
- (With R. Abdolmaleki) *The saturation number of monomial ideals*, Communications in Algebra, vol. **51(8)**, pp. 3163-3171, (2023).
- (With R. Jafari) *Shedding vertices and ass-decomposable monomial ideals*, Rocky Mountain J. Math., vol. **53(1)**, pp. 89-101, (2023).
- (With M. Farrokhi D. G. and Y. Sadegh) *Green-Lazarsfeld index of square-free monomial ideals and their powers*, Journal of algebra, vol. **622**, pp. 676-693, (2023).
- (With A. Nasrollah Nejad) *The Valabrega-Valla Module of Monomial Ideals*, Journal of Algebra and Its Applications, vol. **22**, no. **2**, 2350053 (21 pages), (2023).

- (With M. Farrokhi D. G.) *New methods for constructing shellable simplicial complexes*, Mathematical Researches, vol. **8**, no. (4), pp. 164-179, (2023). (In Persian)
- (With M. Farrokhi D. G. and Sh. Gharakhloo) *Positive matching decompositions of graphs*, Discrete Applied Mathematics, vol. **320**, pp. 311-323, (2022).
- (With M. Bigdeli) *Multigraded minimal free resolutions of simplicial subclutters*, Journal of Combinatorial Theory, Series A, vol. **178**, 105339, (2021).
- (With M. Bigdeli and R. Zaare-Nahandi) *Decomposable clutters and a generalization of Simon's conjecture*, Journal of Algebra, vol. **531**, pp. 102-124, (2019).
- (With A. Nasrollah Nejad, A. Nikseresht, and R. Zaare-Nahandi) *On the blowup of affine spaces along monomial ideals: Tameness*, Journal of Symbolic Computation, vol. **93**, pp. 85-99, (2019).
- (With M. Bigdeli, J. Herzog, and R. Zaare-Nahandi) *Simplicial orders and chordality*, Journal of Algebraic Combinatorics, vol. **45**, Issue **4**, pp. 1021–1039, (2017).
- *Candidates for Non-zero Betti Numbers of Monomial Ideals*, Communications in Algebra, vol. **45**, no. **4**, pp. 1483-1492, (2017).
- (With M. Bigdeli and R. Zaare-Nahandi) *Stability of Betti numbers under reduction processes: Towards chordality of clutters*, Journal of Combinatorial Theory, Series A, vol. **145**, pp. 129-149, (2017).
- (With M. Morales and R. Zaare-Nahandi) *Regularity and Free Resolution of Ideals which are Minimal to d -linearity*, MATHEMATICA SCANDINAVICA, vol. **118** (2), pp. 161-182, (2016).
- (With M. Morales, A. Nasrollah Nejad, and R. Zaare-Nahandi) *Monomial ideals with 3-linear resolutions*, Annales de la Faculté des Sciences de Toulouse, Sér. **6**, **23**: (4), pp. 877-891, (2014).
- (With M. Morales and R. Zaare-Nahandi) *Castelnuovo-Mumford regularity under reduction processes on graphs and hypergraphs*, Electronic Notes in Discrete Math, vol. **45**, pp. 57-62 (2014).
- (With M. Morales and R. Zaare-Nahandi) *The regularity of edge ideals of graphs*, J. Pure and Applied Algebra, vol. **216**, Issue **12**, pp. 2714–2719 (2012).

PARTICIPATING IN MATHEMATICAL MEETINGS:

- *International Conference on Algebraic Geometry, Coding Theory and Combinatorics* (in honour of Sudhir Ghorpade on the occasion of his 60th birthday), 4-8 December 2023, Indian Institute of Technology Hyderabad, Hyderabad, India
- *CIMPA-NCM school on Finite Geometry and Coding Theory*, 20 November 2023 - 1 December 2023, Indian Institute of Technology Hyderabad, Hyderabad, India.
- *54th Annual Iranian Mathematics Conference*, 23-25 August 2023, University of Zanjan, Zanjan, Iran.
- *Interactions Between Topological Combinatorics and Combinatorial Commutative Algebra* (23w5003), 2-7 April 2023, Banff, Canada (attended virtually).
- *18th Seminar on Commutative Algebra and Related Topics*, 9-11 January 2022, IPM (Tehran), Iran.
- *CIMPA School on Combinatorial Commutative Algebra*, 5-14 March 2018, COMSATS, Lahore, Pakistan.
- *Workshop on Combinatorial Commutative Algebra*, 12-14 April 2017, Amirkabir University of Technology, Tehran, Iran.
- *25th Algebra Seminar*, 20-21 July 2016, Hakim Sabzevari University, Sabzevar, Iran.
- *8th Conference and workshop on Algebraic Combinatorics and graph theory*, 7-8 October 2015, Imam Khomeini International university, Qazvin, Iran
- *Summer School on Commutative Algebra and Algebraic Geometry*, 7-10 September 2014, IPM, Tehran, Iran.
- *CIMPA/TÜBITAK/GSU Summer School on Algebraic Geometry and Number Theory*, 2-13 June 2014, Galatasaray University, Istanbul, Turkey.
- *3rd Seminar on Combinatorial Commutative Algebra*, 5-6 February 2014, IPM, Tehran, Iran.
- *10th Seminar on Commutative Algebra and Related Topics*, 18-19 December 2013, IPM, Tehran, Iran.
- *43rd Iranian Mathematics Conference*, 27-30 August 2012, University of Tabriz, Tabriz, Iran.
- *5th Conference on Algebraic Combinatorics and Graph Theory*, 3-4 July 2012, University of Kashan, Kashan, Iran.

- *Workshop on Computational Commutative Algebra*, 2-7 July 2011, IPM, Tehran, Iran.
- *CIMPA-UNESCO-PAKISTAN, Combinatorial and Computational Aspects of Commutative Algebra*, 21-28 February 2009, Abdus Salam School of Mathematical Sciences, Lahore, Pakistan.
- *19th Algebra Seminar of Iran*, 11-12 February 2008, Semnan University, Semnan, Iran.
- *4th Seminar on Commutative Algebra and Related Topics*, 16-17 November 2007, IPM, Tehran, Iran.
- *CIMPA-UNESCO-SPAIN, New Trends in Singularity Theory*, 14-21 August 2006, Universidad Complutense de Madrid (UCM), Madrid, Spain.
- *Winter School on Commutative Algebra and Applications (WSCA06)*, 30 January - 3 February 2006, University of Barcelona, Barcelona, Spain.
- *CIMPA-UNESCO-ZANJAN, School on Gröbner Bases and Applications*, 9-22 July 2005, Institute for Advanced Studies in Basic Sciences, Zanjan, Iran.
- *4th Student Seminar on Mathematics*, March 16-18, 2002, Shiraz University, Shiraz, Iran.

SCHOLARSHIPS AND SUPPORTS

- Financial support of CIMPA/NCM for attending at research School on “**Finite Geometry and Coding Theory**”, 20 November 2023 - 1 December 2023, Indian Institute of Technology Hyderabad, Hyderabad, India.
- Financial support of CIMPA/TÜBITAK/GSU for attending at Summer School on “**Algebraic Geometry and Number Theory**”, 2-13 June 2014, Galatasaray University, Istanbul, Turkey.
- **Scholarship of French Government** for PhD program at "Université de Grenoble I–Institut Joseph Fourier".
- Financial support of CIMPA for attending workshop on "**Combinatorial and Computational Aspects of Commutative Algebra**", Lahore, Pakistan.
- Financial support of CIMPA for attending workshop on "**New Trends on Singularity**", Madrid, Spain.
- Financial support of University of Barcelona for attending "**Winter School on Commutative Algebra and Applications**", Barcelona, Spain.

TEACHING EXPERIENCES:

- **Institute for Advanced Studies in Basic Sciences (IASBS)**
 - Calculus I, II (For IT students)
 - Homological Algebra I, II (For graduate students)
 - Graded rings and modules (For graduate students)
 - Advanced Algebra I, II (For graduate students)
 - Local Cohomology (For graduate students)
 - Commutative Algebra I, II (For graduate students)
 - Combinatorial commutative Algebra (For graduate students)
 - Computational commutative Algebra (For graduate students)
 - Algebraic Geometry I, II (For graduate students)
- **Teaching Assistant (Institute for Advanced Studies in Basic Sciences):**
 - Advanced Algebra I, II (For graduate students, 2007-2010)
 - Algebraic Geometry (For graduate students, 2007-2010)
- **Zanjan University**
 - Calculus I, II (For engineering, 2008-2012)
 - Differential Equation (For engineering, 2008-2012)
- **Payamenoor University**
 - Statistics and probability in Geography (Zanjan unit, 2012)
 - Analysis II (Miyaneh and Bijar unit, 2005-2007)
 - Linear Algebra (Miyaneh and Bijar unit, 2005-2007)
 - Calculus II (Miyaneh and Bijar unit, 2005-2007)
- **Azad University (Zanjan unit)**
 - Calculus I, II (For electric engineering, Computer engineering, Chemistry students), 2007-2010

LECTURES IN CONFERENCES:

- *Gluing simplicial complexes: Topological and combinatorial properties*, International Conference on Algebraic Geometry, Coding Theory and Combinatorics (in honour of Sudhir Ghorpade on the occasion of his 60th birthday), 4-8 December 2023, Indian Institute of Technology Hyderabad, Hyderabad, India
- *Gröbner basis and Krull dimension of Lovasz-Saks-Sherijver ideal associated to a tree*, 54th Annual Iranian Mathematics Conference, 23-25 August 2023, University of Zanjan, Zanjan, Iran.

- *Shedding Vertices and Ass-Decomposable Monomial Ideals*, 18th Seminar on Commutative Algebra and Related Topics, 9-11 January 2022, IPM (Tehran), Iran.
- *Methods for Constructing Shellable Simplicial Complexes*, 51st Annual Iranian Mathematics Conference, 16-19 February 2021, Kashan University, Kashan, Iran (Presented by A. Shamsian).
- *On the Blow up of A_k^n along a monomial ideal*, 25th Iranian Algebra Seminar, 19-20 July 2016, Hakim Sabzevari University, Sabzevar, Iran. (Presented by R. Zaare-Nahandi)
- *Simplicial orders and Betti numbers of chordal hypergraphs*, 25th Iranian Algebra Seminar, 19-20 July 2016, Hakim Sabzevari University, Sabzevar, Iran.
- *Chordal graphs vs chordal hypergraphs: An algebraic point of view*, 8th Conference and workshop on Algebraic combinatorics and graph theory, 7-8 October 2015, Imam Khomeini International university, Qazvin, Iran
- *Betti Numbers, Reduction Processes and Chordality*, Weekly mathematical seminars on Commutative Algebra, 11 June 2015, IPM, Tehran, Iran.
- *Two results on the regularity of monomial ideals*, CIMPA/TÜBITAK/GSU Summer School on Algebraic Geometry and Number Theory, 2-13 June 2014, Galatasaray University, Istanbul, Turkey.
- *Castelnuovo-Mumford regularity under reduction processes on square-free ideals*, 3rd Seminar on Combinatorial Commutative Algebra, 5-6 February 2014, IPM, Tehran, Iran. (Invited Speaker)
- *Two results on Castelnuovo-Mumford regularity*, 10th Seminar on Commutative Algebra and Related Topics, 18-19 December 2013, IPM, Tehran, Iran.
- *Resolution of Ideals which are Minimal to d -linearity*, 43rd Iranian Mathematics Conference, 27-30 August 2012, University of Tabriz, Tabriz, Iran.
- *Castelnuovo-Mumford regularity under reduction processes on Graphs and Hypergraphs*, 5th Conference on Algebraic Combinatorics and Graph Theory, 3-4 July 2012, University of Kashan, Kashan, Iran.
- *Regularity of monomial ideals generated in degree 2 and 3*, 2nd Seminar on Combinatorial Commutative Algebra, IPM, February 2012. (Presented by R. Zaare-Nahandi)
- *A classification of monomial ideals with 3-linear minimal free resolution*, 22nd Iranian Algebra Seminar, Sabzevar Tarbiat Moallem University, 31 Jan - 2 Feb 2012.

(Presented by R. Zaare-Nahandi as Keynote speaker)

- *A Review of Canonical Modules*, Zanjan University (In occasion of research week), 14-20 December 2008.

Organizing Schools, Workshops, and Conferences:

- 3rd seminar on Challenges facing mathematical education, 2-4 November 2022, IASBS, Zanjan, Iran
(Member of the organizing committee)
- 7th Summer school for undergraduate students, August 27-September 6, 2022, IASBS, Zanjan, Iran
(Member of the organizing committee)
- 3rd Research School on Commutative Algebra and Algebraic Geometry (RSCAAG-3) "Applied Algebraic Geometry", August 17-29, 2019, IASBS, Zanjan, Iran.
(Member of the organizing committee)
- 2nd Research School on Commutative Algebra and Algebraic Geometry (RSCAAG-2) "Computational Commutative Algebra", September 1-11, 2018, IASBS, Zanjan, Iran.
(Chair of the organizing committee)
- Third Summer school for undergraduate students, August 24-September 8, 2018, IASBS, Zanjan, Iran
(Member of the organizing committee)
- First Research School on Commutative Algebra and Algebraic Geometry (RSCAAG-1) "Algebra, combinatorics and geometry of monomial algebra", August 5-17 2017, IASBS, Zanjan, Iran.
(Chair of the organizing committee)
- The 9th Seminar on Geometry and Topology, July 26-27, 2017, University of Maragheh, Maragheh, Iran.
(Member of the scientific committee)
- Summer school for undergraduate students, August 28-September 8, 2016, IASBS, Zanjan, Iran
(Member of the organizing committee)

COMPUTER SKILLS:

Programming with C, C++ and Java

Familiar with MAPLE, GAP, CoCoA, Singular, LaTeX, XePersian
Environments: Windows, Linux.

LANGUAGES:

Persian (Maternal), English (Professional),
French (Basic), Arabic (Reading and Writing).