





+96895195025 | 
ch.zarge@gmail.com | 
orcid.org/0000-0002-1763-1568 | ORCID

DR. CHIA ZARGEH

POSITIONS

- 2022 – **Assistant Professor**
Modern College of Business & Science, Muscat, Sultanate of Oman.
- 2020 – 2021 **Postdoctoral Researcher**
Institute of Mathematics and Statistics, University of Sao Paulo (USP), Brazil.
Project: Combinatorial and algorithmic aspects of algebras which are not Schreier.
- 2019 – 2020 **Postdoctoral Researcher**
Federal University of Bahia (UFBA), Brazil.
Project: Existentially closed algebraic structures
- 2013 – 2015 **Research assistant**
Institute of Computational Mathematics, TU Braunschweig, Germany.
Project: Algorithms for Lie algebras over finite fields,

Education

- 2015 – 2018 **Ph.D., Mathematics**
University of Santiago de Compostela (USC), Spain.
Thesis: Higman-Neumann-Neumann-Extension and embedding theorems for Leibniz algebras,
Advisor: Prof. Manuel Ladra
Co-advisor: Prof. Mohammad Shahryari
- 2003– 2006 **M.Sc., Mathematics**
University of Tabriz, Iran.
Thesis: Fp-injective, Simple injective and QF-rings,
Advisor: Prof. A. Mehdizadeh Aghdam
- 1999 – 2003 **B.Sc., Mathematics**
Azarbaijan University of Tarbiat Moallem, Tabriz, Iran.
-

Research interests

- Associative & Non-associative Algebras and Algorithmic and Combinatorial Methods
- Computer Algebra and its Applications
- Algebraic approaches in Post-Quantum Cryptography
- Mathematics Education

Award and Research Grants

- 2020 – 2021 **National Council for Scientific and Technological Development, CNPq research grant, Brazil.**
- 2019 – 2020 **Coordination for the Improvement of Higher Education Personnel, Capes-PNDP research grant, Brazil.**
- 2015– 2018 **Thematic Network of Symbolic Calculus, Computational Algebra and Applications, (Red EACA, Agencia Estatal de Investigación), Spain.**
- 2013– 2015 **Young Researcher Supports for Abroad Studies, SAMA Technical and Vocational College, IAU University, Mahabad branch, Iran.**
- 2010 **2nd place in National Robocup Tournament (supervisor), SAMA Technical and Vocational College, Shiraz, Iran.**
-

Publications & Book Chapters

1. A normal form for HNN-extensions of dialgebras, **Missouri J. Math. Sci.** 35 (1), 2023 85-94., <https://doi.org/10.35834/2023/3501085>.
2. Operadic approach to HNN-extensions of Leibniz algebras, (with Georg Klein), **Quasigroups and related systems**, 30 (1) 2022 101-114. <https://doi.org/10.56415/qrs.v30.08>.
3. Varieties of Null-filiform Leibniz algebras under the action of Hopf algebras, (with Lucio Centrone), **Algebr. Represent. Theor.** (2021). <https://doi.org/10.1007/s10468-021-10105-2>
4. HNN-extension of involutive multiplicative Hom-Lie algebras, (**Book Chapter** with Sergei Silvestrov) in: Silvestrov, S., Malyarenko, A. (eds) Non-commutative and Non-associative Algebra and Analysis Structures. SPAS 2019. Springer Proceedings in Mathematics & Statistics, vol 426.
5. Existentially closed Leibniz algebras and an embedding theorem, Proceedings of the 3th International Workshop on Non-associative Algebras in Malaga, Spain. (**Communications in Mathematics**, vol.29, no.2, 2021, pp.163-170. doi.org/10.2478/cm-2021-0015.)
6. Matching Hom-setting of Rota-Baxter algebras, dendiform algebras and pre-Lie algebras, (with D. Chen, X-Song Peng and Y. Zhang), **Advances in Mathematical Physics**, (2020) <https://doi.org/10.1155/2020/9792726> .
7. HNN-extension of Lie superalgebras, (with M. Ladra and P. Páez-Guillán), **Bull. Malays. Math. Sci. Soc.** 43, , 1959–1970(2020). DOI:10.1007/s40840-019-00783-z
8. HNN-extensions of Leibniz algebras, (with M. Ladra and M. Shahyari) **Journal of Algebra**, 532 , 183–200 (2019). DOI:10.1016/j.jalgebra.2019.05.014
9. A note on simplicity of contact Lie algebras over $GF(2)$, **Algebra and Discrete Mathematics**, vol. 24, no. 2, 331–336, (2017) SCOPUS and Wob indexed journal.

10. Some remarks on derivations of Leibniz algebras, **International Journal of Algebra** vol. 6, no. 30, 1471–1474, (2012)

Submitted or In preparation

1. HNN-extensions of Poisson algebras (joint with Manuel Arenas, submitted)
2. A semiderivation HNN construction for Poisson algebras (joint with Manuel Arenas, submitted)
3. On soft intersection Poisson algebras (joint with Nil Mansuroğlu, submitted.)
4. On the Undecidability of Markov Properties for Lie superalgebras (with Alireza Najafizadeh, Submitted)
5. THE SQUARE SUBGROUP OF A GROUP WITH OPERATORS (In preparation joint with Alireza Najafizadeh.)
6. Construction of Differential HNN extensions of Lie algebras (In preparation, joint with Xing Gao and Huhu Zhang)

Educational Research papers

1. Post-Pandemic Mathematics Education: Lessons from online teaching in Oman. submitted. (joint work)
2. AI artifact in mathematics didactical situations: A developed model. (joint work)

Presentations & Conferences

- International Conference on Recent Trends in Mathematics, 4-6 March 2024, Sultan Qaboos University, Oman. **Title of Talk: An Overview on Some Applications of the Theory of Gröbner-Shirshov Bases.**
- 11th European Conference on Education (ECE 2023), July 13-17, 2023, London & Online, UK.
Title of Talk: The Relation Between Mathematics Education Software and Mathematics Thinking Styles (with N. Suleiman, R. Abraham and J. Mani)
- International Conference on RECENT TRENDS IN ALGEBRA, GEOMETRY, AND ARITHMETIC, Research Institute of Science and Technology (RISAT), Vlora, Albania, June 9-12, 2022.
Title of Talk: On embedding theorems for Poisson algebras
- International Conference on Mathematics of Machine Learning, Center for Interdisciplinary Research (ZiF), Bielefeld University & Max Planck Institute of Mathematics in the Science, Germany, 4-7 August 2021. **Applications of associative algebras in machine learning**
- International Conference on Poisson Geometry, IMPA Conference, Rio de Janeiro, Brazil, Dec 2019.
Combinatorial aspects of Poisson algebras
- VII Post-Graduate Meeting in Mathematics, Federal University of Bahia, Salvador, Brazil, Nov 2019.
Polynomial Identity Theory for Leibniz algebras,
- 25th International Conference on Applications of Computer Algebra, Montreal, Canada, June 2019.
Session: Computational Differential and Difference Algebra and its Applications,
HNN-extension of free Rota-Baxter Lie algebras

- Caucasian Mathematics Conference, (CMC II), Van, Turkey, August 2017.
Groebner-Shirshov basis for Leibniz algebras and their enveloping di-algebras
- 9th Seminar on Linear algebra and its applications, University of Tabriz, Tabriz, Iran, June 2017.
On the construction of HNN-extension for dialgebras
- 12th Iranian Mathematics Education Conference, Semnan, Iran, 2012.
Assesment of professional skills of mathematics lecturers in technical and vocational colleges.
(with S. Awari and K. Musazadeh - in Persian)
- Second Seminar on algebra and its applications, University of Mohaghegh Ardabili, Iran, September 2012.
Leibniz algebras admitting non degenerated derivations

Workshops and Schools

Feb-2024	Hybrid Conference on AI-Math, State University of Rio de Janeiro, RJ, Brazil.
2023-2024	Weekly online European Non-Associative Algebra Seminars, Organized by Ivan Kaygorodov et al.,
2020-2021	Weekly online Lie-Jor Seminars, Institute of Mathematics and Statistics, USP, Sao Paulo, Brazil.
2020	Swedish Network for Algebra and Geometry, Online seminar, Sweden.
2019	School of Poisson Geometry, IMPA, Rio de Janeiro, Brazil.
2016	Third EACA International School on Computer Algebra and its Applications, Sevilla University, Spain.
2015	Workshop on Computations in Groups and Algebras (CoGrAl2015), Jena, Germany
2014	Minicourse: Vertex algebras, W-algebras, Centro di Ricerca Matematica Ennio De Giorgi, Italy.
2014	Seminar of Group Theorists at North of Germany, Bielefeld University, Bielefeld, Germany.
2014	Weekly Seminars on Computer Algebra System, GAP, TU Braunschweig, Germany
2014	Workshop on Experimental Methods in Computational Algebra, Leibniz University, Hannover, Germany
2013	Summer School on Algorithmic Mathematics, Hamburg University, Germany
2012	Workshop on Study of Maple soft-ware and Group Theory Package, Univ. of Mohaghegh Ardabili, Iran
2012	Summer School on Theoretical Computer Science, IPM, Tehran, Iran

ADMINISTRATIVE EXPERIENCES

May 8-9, 2023	Member of organizing committee of International Conference on Computational Sciences and sustainable technologies, Muscat, Oman .
2022- 2023	Member of examination committee, MCBS, Oman .
2006 - 2013	Directed Research Activities of students, SAMA Technical and Vocational College, Kurdistan of Iran . <ul style="list-style-type: none">• Held annual scientific competitions such as programming skills for computer science students.• Co-chair, Local Conference on Action Research in Education, Mahabad, West Azarbaijan, (2008).• Co-chair, National Conference on Challenges Encountered in the Teaching of Natural Sciences and Mathematics at Technical and Vocational Colleges, (2010).• Supervised computer science students in RoboCup tournament, Shiraz, Iran, (2010).

Teaching Experiences

2022– present	Modern College of Business & Science, Oman Assistant Professor · <ul style="list-style-type: none">• Discrete Mathematics• Linear Algebra• Introduction to Group Theory• Basic and Advanced Calculus• Introduction to Mathematical Statistics
Oct 2018– Jan 2019	University of Duhok, Kurdistan Region of Iraq Visiting Lecturer (after Ph.D) · <ul style="list-style-type: none">• Linear algebra and applications (undergraduate course)• Algebraic approaches to PDE (graduate course)• Supervised bachelor's level students in preparation of their research reports.
2007 – 2011	Payame Noor University Visiting Lecturer (before Ph.D) · <ul style="list-style-type: none">• Linear Algebra (Mathematics major)• Numerical Linear Algebra (Computer Science major)• Calculus & Advanced Calculus• Mathematical Logic for computer science• Statistics and Probability• Mathematics education• Organized weekly seminars to review inclusive mathematics education in Iran.
2006–2013	SAMA Technical and Vocational College, Kurdistan of Iran Visiting Lecturer (before Ph.D) · <ul style="list-style-type: none">• Applied Mathematics (associate degree)• Basic Statistics and Probability (associate degree)• Fundamental of computer programming (associate degree)• Calculus & pre-university Math (associate degree)

Professional Development (Certificates)

July 2024	Assessment in Higher Education: Professional Development for Teachers, Erasmus Uni. Rotterdam
April 2023	Programming for Everybody (Getting Started with Python), at Coursera. University of Michigan
July 2022	Learning to Teach Online, at Coursera. The University of New South Wales
June 2020	The Data Scientist's ToolBox, at Coursera. Johns Hopkins University
September 2019	Machine Learning, at Coursera. Stanford University

Technical Skills

Computer Algebra Systems: GAP & Maple (Group theory package) & MS-Teams, Python,& LaTeX & Microsoft Office

Editorial roles & Memberships

Reviewer for *American Mathematical Society (AMS)* since 2022,

Reviewer for *zbMATH Open* since 2020

Technical editor of journal, *Communications in Mathematics* (2020 - 2022)

Member of *The International Academic Forum (IAFOR)* (2023-24)

Member of *European Mathematical Society* (2021-2022)

Member of *Iranian Mathematical Society* (2013-2014)

Member of *Center for University-Industry collaboration at Azad University in Kurdistan of Iran*, (2008 - 2011)

LANGUAGES

English (advanced)

Kurdish (mother tongue)

German (A2 level)

Persian (fluent)
