

C.V. of Mehdi Nadjafikhah Prof. of Math.

“Department of Pure Mathematics”, “Department of Computer Sciences” and “Computetional Geometry Lab”, School of Mathematics and Computer Sciences, Iran University of Science and Technology, Narmak, Tehran, 1684613114, I.R.IRAN.

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Social Networks: [Instagram](#), [Telegram](#), [Facebook](#)

Me on: [Google Scholar](#), [Publons](#), [ResearchGate](#), [ResearcherID](#), [arXiv](#).

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Born: 13 May 1970 (23 Ordibehesht 1349), Tehran, I.R.Iran.¹

Education:

- **Bs.C.**, 1992, IUST, Mathematics - Pure Mathematics.
- **Ms.C.**, 1994, IUST, Pure Mathematics - Geometry and Topology; Theory of G -structures and equivalence problems. Advisor: Prof. E. Esrafilian.
- **Ph.D.**, 1998, IUST, Pure Mathematics - Differential Geometry; Theory of finite order G -structures. Advisor: Prof. E. Esrafilian.

Professional Experience:

- **Professor of Mathematics** : Department of Pure Mathematics, School of Mathematics and Computer Sciences, IUST, I.R.Iran, 2018-.
- **Professor of Mathematics** : Department of Computer Sciences, School of Mathematics and Computer Sciences, IUST, I.R.Iran, 2020-.
- **Dean of Computetional Geometry Lab** : IUST, I.R.Iran, 2019-.
- **Dean of School of Mathematics** : IUST, I.R.Iran, 2014-2019.
- **Associate Professor of Mathematics** : Department of Pure Mathematics, School of Mathematics, IUST, I.R.Iran, 2008-2018.
- **Associate Professor of Mathematics** : Department of Mathematics, Faculty of Science, IAU, VPB, I.R.Iran, 2008-2015.
- **Research Administrator of School of Mathematics** : IUST, I.R.Iran, 2008-2014.
- **Assistant Professor of Mathematics** : Department of Pure Mathematics, Faculty of Sciences, IAU, VPB, I.R.Iran, 2004-2008.
- **Head of Department of Pure Mathematics** : School of Mathematics, IUST, I.R.Iran, 2000-2004.
- **Assistant Professor of Mathematics** : Department of Pure Mathematics, School of Mathematics, IUST, I.R.Iran, 1998-2008.

¹Last update: **April 27, 2024** (in 24 pages). IUST is the abbreviated form of “Iran University of Science and Technology”. IAU is the abbreviated form of “Islamic Azad University”. VPB is the abbreviated form of “Varamin Pishva Branch”.

Teaching Duties:

- **For Ph.D. students:** Exterior differential systems 1, Exterior differential systems 2, Equivalence invariant and symmetry 1, Equivalence invariant and symmetry 2, Applications of Lie groups to DEs 1, Applications of Lie groups to DEs 2, Riemannian geometry, Selected topics in differential geometry, Topological and Lie groups. (9 items)
- **For graduate students:** Differentiable manifolds 1, Differentiable manifolds 2, Lie groups and Lie algebras 1, Lie groups and Lie algebras 2, Differential topology 1, Differential topology 2, Dynamical systems 1, Dynamical systems 2, Selected topics in differential geometry. (9 items)
- **For undergraduate students:** Advanced engineering mathematics, Basic algebraic topology, Basic differential topology, Basic projective geometry, Calculus 1, Calculus 2, Discrete mathematics, Elementary Lie group analysis, Elementary dynamical systems, Engineering mathematics, Foundations of geometry, Foundations of logics and set theory for computer sciences, Foundations of mathematics, Foundations of mathematics for computer sciences, Foundations of matrices and linear algebra, Foundations of matrices and linear algebra for computer sciences, Foundations of combinatorial mathematics for computer sciences, General mathematics A, General mathematics AA, General mathematics AAA, General topology, Global differential geometry, History of mathematics, Local differential geometry, Mathematical analysis 1, Mathematical analysis 2, Mathematical analysis 3, Ordinary differential equations, Partial differential equations, Probability and statistics for engineers. (30 items)

My Interests:

My research interests revolve around the applications of symmetry and Lie groups to differential equations, and vice versa. I'm also interested in the use of geometry in dynamic systems. In particular, solitons integrability and super-symmetric equations. Personally, I am interested in visual arts and reading. I draw and always study philosophical, logical, psychological and historical books.

Professional Service:

- Member of Organizing Committee, In 2nd International Conference of Applied Mathematics, IUST, Tehran, Iran, Oct. 25-27, 2000.
- Member of Organizing Committee, In 4th Seminar on Mathematical Analysis and its Applications, IUST, Tehran, Iran, Feb. 4-5, 2004.
- Member of Organizing Committee, In the 7th International Iranian Workshop on Stochastic Processes, School of Mathematics, IUST, Nov. 30 and Dec. 1-2, 2010, Tehran, Iran.
- Dean of Organizing Committee of 7th Seminar on Geometry and Topology, IUST, Thehran, Iran, Jan. 29-30, 2014.
- Member of Editorial Board, Journal of Mathematics Research, ISSN: 1916-9809, 2010-2014, ([Journal](#))
- Member of Editorial Board, Journal of Statistics and Mathematics, ISSN: 0976-8807, 2010-2013, ([Journal](#))
- Member of Editorial Board, International Journal of Fundamental Physical Sciences (IJFPS), ISSN: 2231-8186, 2010-2014, ([Journal](#))
- Member of Editorial Board, Mathematical Sciences, ISSN: 2008-1359, 2009-, ([Journal](#))
- Member of Editorial Board, International Journal of Mathematical Physics, ISSN: 2630-4600, 2019-, ([Journal](#))
- Member of Associate Editorial Board, Asian Journal of Mathematics & Statistics, ISSN: 2077-2068, 2012-, ([Journal](#))

- Member of Associate Editorial Board, Current Research in Physics, ISSN: 2154–3127, 2012-, ([Journal](#))
- Member of Academic Committee of The 45th Annual Iranian Mathematics Conference (AIMC 45), Seman University, Semnan, Iran, 2014.
- Member of Academic Committee of The 46th Annual Iranian Mathematics Conference (AIMC 46), Yazd University, Yazd, Iran, 2015.
- Member of Academic Committee of Differential Geometry and Differential Equations' Seminars, Amir Kabir University, Tehran, Iran, 2015.
- Member of Academic Committee of The 9th Seminar on Geometry and Topology, University of Maragheh, Iran, 2017.
- Secretary of the Executive Committee of 49th Annual Iranian Mathematical Conference, IUST, 2018.
- I am also referee for the following journals: Communications in Nonlinear Science and Numerical Simulation, Punjab University Journal of Mathematics, Boundary Value Problems, Nonlinear Dynamics, Abstract and Applied Analysis, Advances in Difference Equations, ESAIM - Control, Optimisation and Calculus of Variations, Geometry, Indian Journal of Mathematics, and 12 other journals.

Ph.D. Students (now and former):

1. **Ahmad-Reza Forough** :: *Gardner method in Cartan equivalence problem and its applications on partial differential equations*, IUST, 2003-2007. :: Islamic Azad University, Tehran North Branch.
2. **Ali Mahdipour-Shirayeh** :: *Cartan's method of equivalence, symmetry and exterior differential systems*, IUST, 2005-2009. :: University of Waterloo, Canada. ([link](#))
3. **Seyed-Reza Hejazi** :: *Contact geometry and symmetry analysis of differential equations*, IUST, 2007-2011. :: Sharood University of Technology, Shahrood. ([link](#))
4. **Rouholah Bakhshandeh-Chamazkoti** :: *Method of equivalence and its applications*, IUST, 2008-2012. :: Noshivani Babol University of Technology, Babol, Mazandaran, Iran. ([link](#))
5. **Narges Yaftian**, *Mathematical creativity and mathematical education*, IUST, 2008-2013 :: Shahid Rajaei University, Tehran, Iran.
6. **Fateme Ahangari** :: *Application of Lie groups in the study of partial differential equations*, IUST, 2009-2013 :: Alzahra University, Tehran.
7. **Vahid Shirvani-Shahenayati** :: *Lie transformation groups and its application to partial differential equations derived from fluid mechanics*, KIAU, 2009-2013 :: Islamic Azad University, Islamabad Garb Branch.
8. **Naser Asadi** :: *Applications moving frames and Lie pseudo-groups in differential equations*, KIAU, 2009-2013.
9. **Parastoo Kabi-Nejad** :: *Symmetries and conservation laws for differential equations*, IUST, 2010-2015. :: Iran University of Science and technology.
10. **Mehdi Jafari** :: *Application of Lie group analysis in geometry of Walker manifolds*, PNU, 2010-2013 :: Payame Noor University.
11. **Ardavan Mokhtary** :: *Application of geometric equivalence method in control theory and differential equations*, PNU, 2010-2014 :: Payame Noor University.
12. **Reza Dastranj** :: *Lie group analysis of differential equations*, KIAU, 2010-2014 :: Masaryk University, Czech Republic.
13. **Mostafa Hesami-Arshad** :: *Application of Cartan's equivalence method in differential equations*, KIAU, 2010-2014 :: Islamic Azad University, Toyserkan Branch.

14. **Abolhassan Mahdavi** :: *Application of approximate symmetries in perturbed differential equations*, KIAU, 2010-2014 :: Islamic Azad University, Ilam Branch.
15. **Leila Hamedi-Mobara** :: *The application of Lie groups in reducing of partial differential equations and investigation about the reductions of the Zabolotskaya–Khokhlov equation*, PNU, 2011-2016 :: Islamic Azad University, Fouman and Shaft Branch.
16. **Hamid-Reza Yazdani** :: *Application of the wavelet in the geometry of differential equations*, PNU, 2011-2017.
17. **Narges Pourrostami** :: *Lie symmetry analysis and adjoint equations*, PNU, 2011-2017.
18. **Mohammad Rahimian** :: *Approximate Lie symmetry theory and applications of the study of perturbed differential equations*, KIAU, 2011-2017 :: Islamic Azad University, Masjed Soleiman Branch.
19. **Khodayar Goodarzi** :: *Lie symmetry theory, λ -symmetry, μ -symmetry and its relation with fractional partial differential equations*, KIAU, 2011-2015 :: Islamic Azad University, Broujerd Branch.
20. **Maryam Khorshidi** :: *Lie symmetry theory and its relation with fractional partial differential equations*, KIAU, 2011-2015.
21. **Yousef Masoudi** :: *Moving frames and conservation laws*, KIAU, 2012-2017. :: Islamic Azad University, Naghadeh Branch.
22. **Afsoon Goodarzian** :: *Solving and properties of geodesic equations of a family of Finsler metrics*, KIAU, 2012-2018.
23. **Maryam Jamreh** :: *Geometry of Ricci solitons on semi-Riemannian manifolds*, IUST, 2012-2019.
24. **Elnaz Alimirzaloo** :: *Geometric structure of Burger's equation and its generalizations*, IUST, 2013-2021.
25. **Saeid Shagholi** :: *Optimization mathematical model of infectious diseases*, IUST, 2013-2019. :: Semnan University.
26. **Hamid Razaghi** :: *Perturbation analysis of mathematical models in engineering and physical sciences with a small parameter*, PNU, 2013-2021.
27. **Nishtman Zandi** :: *The study of Conformal-Einsteins equations*, PNU, 2014-2023. (Collabrated by **Yadolla AryaNejad**) Ph.D.S-PN-8
28. **Seyedeh-Mansoureh Mirala** :: *On the Birkhoffian systems*, PNU, 2013-. (Collabrated by **Mohammad Chaichi**)
29. **Mahdieh Yourdkhany** :: *PDEs and their symmetries*, KIAU, 2015-2020.
30. **Maryam Yourdkhany** :: *Symmetry and invariance of DEs*, KIAU, 2015-2020.
31. **Zahra Momen-nezhad** :: *Symmetry and thair applications in PDEs*, KIAU, 2013-2020.
32. **Davood Farokhi** :: *On geometrical symmetries and coservation laws for some space-times on riemannian manifolds*, KIAU, 2015-2020. (Collabrated by **Ruholah Bakhshandeh-Ch.**)
33. **Rabon Ghafari** :: *Dynamic data visualization in the market economy*, IUST, 2019-.
34. **Samar AL-Nassar** :: *Geometric structure and exact solutions of Fokker-Plank equations*, IUST, 2020-2023 :: University of Thi-Qar, Iraq.
35. **Hind Al-Bdeiri** :: *Geometric analysis of approximate solution of fractional dynamical system for (HTLV-1) Virus of CD_4^+ T-cells*, IUST, 2021-. :: University of Al-Qadisiya, Iraq.
36. **Mohammad Nasiri** :: *Computational conformal geometry and Manifold Learning*, IUST, 2021-.
37. **Mehdi Mirzavand** :: , IUST, 2022-.

38. **Maryam Dehbandi** :: , IUST, 2022-.
39. **Fatemeh Kashkooei** :: , IUST, 2022-.
40. **Omid Adeli** :: , IUST, 2023-.
41. **Mansour Hossein-Haji-Hassan** :: , IUST, 2023-.

M.Sc. Students (now and former):

1. **Naghme Moshtaghy** :: *On the “I.A. Kogan, Inductive approach to Cartans moving frame method with applications to classical invariant theory, University of Minnesota, 2000”*, IUST, 2000-2002.
2. **Majid Khalili** :: *General theory of the moving frames*, IUST, 2000-2002.
3. **Arash Shamloo** :: *On the “A.D. Lewis, Energy preserving affine connections, 1997”*, IUST, 2001-2003. :: University of Saskatchewan, Canada.
4. **Hasan Najafi-Alishah** :: *Affine connection control systems*, IUST, 2001-2003. :: Instituto Superior Técnico, Portugal.
5. **Hamid-Reza Salimi-Moghadam** :: *On the “D.V. Alekseevsky and P.W. Michor, Differential geometry of Cartan connections, Publ. Math. Debrecen, 47/3-4 (1995), 349375”*, IUST, 2002-2004. :: Isfahan University, I.R.Iran. ([link](#))
6. **Esmaeil Noroozi** :: *Relation between affine connections and constraints*, IUST, 2003-2005.
7. **Ali Mahdipour-Shiraye** :: *On the “E.T. Newman and P. Nurowski, Projective connections associated with second order ordinary differential equations, 2003 Class. Quantum Grav. 20 23–25.”*, IUST, 2003-2005. :: University of Waterloo, Canada. ([link](#))
8. **Hasan Mahmoodi** :: *On the “P.J. Olver, Joint invariant signatures, Found. Comput. Math. 1 (2001), 3-67.”*, IUST, 2003-2005.
9. **Rooholah Azizi** :: *Galilean space times*, IUST, 2003-2005.
10. **Seyed-Mahdi Mousavi** :: *On the “A.N. Bernal, M. Sanchez, Leibnizian, Galilean and newtonian structures of space time, Journal of Mathematical Physics, 44 (3), 1129–1149”*, IUST, 2004-2006. :: Windsor University, Canada.
11. **Ali-Reza Rahmani** :: *On the “A.D. Lewis, Affine connection control systems, 1999.”*, IUST, 2004-2006.
12. **Najme Mohammad-Jafari** :: *Overdetermined equivalence problems and its applications in control*, NTB, 2004-2006.
13. **Kalamollah Shakeri** :: *Cartan’s equivalence method*, NTB, 2004-2006.
14. **Mohammad-Hosein Tavasoli** :: *Geometry and nonlinear connections*, NTB, 2004-2006.
15. **Kamran Farhad-Zadeh** :: *Exterior differential systems*, NTB, 2005–2007.
16. **Seyed-Reza Hejazi** :: *Theory of differential invariants*, IUST, 2005-2007. :: Sharood University of Technology, Shahrood. ([link](#))
17. **Mahdi Nemati** :: *On “P.J. Olver, G. Sapiro and A. Tannenbaum, Differential invariant signatures and flows in computer vision: a symmetry group approach, in: Geometry-Driven Diffusion in Computer Vision, B.M. Ter Haar Romeny, ed., Kluwer Acad. Publ., Dordrecht, Netherlands, 1994, pp. 255–306.”*, IUST, 2005-2007.
18. **Parastoo Kabi-Nejad** :: *On the “P.J. Olver, Differential invariants of surfaces, Diff. Geom. Appl. 27 (2009), 230–239.”*, IUST, 2006-2008. Ph.D. Student IUST, I.R. Iran.

19. **Sara Mehdipour** :: On the “P.J. Olver, Geometric foundations of numerical algorithms and symmetry, *Appl. Alg. Engin. Comp. Commun.* 11 (2001), 417–436.”, IUST, 2006-2008.
20. **Tahere Reza-Khoshdany** :: On the “P.J. Olver, Invariant submanifold flows, *J. Phys. A* 41 (2008), 344017.”, IUST, 2006-2008.
21. **Roololah Bakhshande-Chamazkooti** :: On the “P.J. Olver, Generating differential invariants, *J. Math. Anal. Appl.* 333 (2007), 450–471.”, IUST, 2006-2008. :: Noshivani Babol University of Technology, Babol, Mazandaran, Iran. ([link](#))
22. **Mehdi Bikdeloo** :: On the “R. Atkins, The geometry of a pair of second order ordinary differential equations and Euclidean spaces, *Canad. Math. Bull.* Vol. 49 (2), 2006 pp. 170–184.”, IUST, 2007-2009.
23. **Nahal Nasir-Zadeh** :: On the “O.I. Morozov, Symmetries of differential equations via Cartan’s method of equivalence, *Journal of Physics A, Mathematical and General*, 2002, V 35, pp. 2965–2977.”, IUST, 2007-2009.
24. **Sajad Nazari** :: On the “P.J. Olver and J. Pohjanpelto, Maurer-Cartan forms and the structure of Lie pseudo-groups, *Selecta Math.* 11 (2005), 99–126.”, IUST, 2007-2009.
25. **Saeed Dodangeh** :: On the “E. Hubert, Differential invariants of a Lie group action: syzygies on a generating set, *Journal of Symbolic Computation*, Vol 44, 4, 2009, 382–416.”, IUST, 2008-2010.
26. **Elahe Oftadeh** :: On the “O. Morozov, Symmetries of differential equations and Cartan’s equivalence method, *Proceedings of Institute of Mathematics of NAS of Ukraine*, 2004, Vol. 50, Part 1, 196–203.”, NTB, 2008-2010.
27. **Maryam Abdolsamadi** :: On the “O. Morozov, Structure of symmetry groups via Cartan’s method, *Survey of four approach, SIGMA* 1 (2005), 006.”, NTB, 2008-2010.
28. **Parvane Ahmadi** :: An introduction to symmetry methods in the solution of differential equations that accrue in Chemistry and Chemical Biology, NTB, 2009-2011.
29. **Amin Dehghani** :: Group classification of the differential equations with a delay, IUST, 2009-2011.
30. **Mohammad-Javad Afshari** :: On the “N.H. Ibragimov, V.F. Kovalev and V.V. Pustovalov, Symmetries of integro-differential equations: a survey of methods illustrated by the Benney equations. *Nonlinear Dyn.* 28(2), 135–153 (2002).”, IUST, 2009-2011. Ph.D. student of IASBS, Zanjan, I.R. Iran.
31. **Saeede Rashidi** :: On the “V.A. Baikov, R.K. Gazizov and N.H. Ibragimov. *Approximate symmetries. Math. Sbornik*, 136 (178), No.3:435-450, 1988. English transl., *Math. USSR Sb.*, 64 (1989), No.2, 427–441.”, IUST, 2009-2011.
32. **Maryam Khoda-Moradi** :: On the “G. Gaeta and P. Morando, On the geometry of lambda-symmetries and PDE reduction, *J. Phys. A: Math. Gen.* 37 (2004) 6955–6975.”, NTB, 2009-2011.
33. **Maryam Karimi** :: On the “R.O. Popovich and A. Sergeev, Conservation laws and normal forms of evolution equations, *Phys. Lett. A* 374: 2210-2217, 2010.”, NTB, 2011-2013.
34. **Mohammad-Reza Razavi-Motlagh** :: Lie group analysis of 2–dimensional nonlinear heat equations, IUST, 2010-2012.
35. **Mohammad Doosti** :: Invariant Lagrangians and integration of nonlinear equations, IUST, 2010-2012.
36. **Fathollah Kheradmand** :: Control of nonholonomic mechanical systems, IUST, 2010-2012.
37. **Neda Mirzaee** :: Lie group analysis of Burgers’ equation, IUST, 2010-2012.
38. **Maryam Yaghesh** :: On “R. Cimpoiasu and R. Constantinescu, Symmetries and invariants for the 2D-Ricci flow model, *Journal of Nonlinear Mathematical Physics* Vol 13, No 2 (2006), 285–292.”, IUST, 2010-2012.

39. **Omid Chekini** :: *Method of construction of conservation laws*, IUST, 2011-2013.
40. **Hamide Saghaei** :: *Lie-Bäcklund and Noether symmetries*, IUST, 2011-2013.
41. **Reza Mohammadi** :: *On the “R. Bryant, P.A. Griffiths and D.A. Grossman, Exterior differential systems and Euler-Lagrange partial differential equations, University of Chicago Press, Chicago, IL, 2003.”*, IUST, 2011-2013.
42. **Zahra Pahlevani-Tehrani** :: *On the “F. Valiquette, Solving local equivalence problems with the equivariant moving frame method, SIGMA 9 (2013), 029.”*, IUST, 2011-2013.
43. **Mohammad Mahdi-Gilak** :: *On the Schwarzschild spacetime*, IUST, 2012-2014.
44. **Mohammad Pak-Nezhad** :: *On the “M. Nadjafikhah and F. Ahangari, Symmetry analysis and conservation laws for the Hunter-Saxton equation, Commun. Theor. Phys. 59 (2013) 335–348.”*, IUST, 2012-2014.
45. **Najmeh Shafiee** :: *On “E. Calabi, P.J. Olver and A. Tannenbaum, Affine geometry, curve flows, and invariant numerical approximations, Adv. in Math. 124 (1996), 154–196.”*, IUST, 2012-2014.
46. **Aboozar Dastpak** :: *On the “P.J. Olver, Differential invariants of maximally symmetric submanifolds, J. Lie Theory 19 (2009), 79–99”*, IUST, 2012-2014.
47. **Samira Zeinali-Pour** :: *On the “J. Cheh, P.J. Olver and J. Pohjanpelto, Algorithms for differential invariants of symmetry groups of differential equations, Found. Comput. Math. 8 (2008), 501–532.”*, IUST, 2012-2014.
48. **Omid Adeli** :: *Curve evolution and level sets*, IUST, 2012-2014.
49. **Masumeh Khodaverdi-Samani** :: *Three-manifolds with positive Ricci curvature*, IUST, 2012-2014.
50. **Nasim Daryani** :: *Diffeological spaces*, IUST, 2013-2015.
51. **Saeid Rezaei** :: *On the classification of complex and real algebras*, IUST, 2015-2017.
52. **Mina Bayat** :: *On “Kh. Goodarzi and M. Nadjafikhah, μ -symmetry and μ -conservation law for the extended mKdV equation, Journal of Nonlinear Mathematical Physics, Vol. 21, No. 3, 2014, 371–381.”*, IUST, 2013-2015.
53. **Fatemeh Fahimi-Shijani** :: *On the Backlund transformations*, IUST, 2013-2015.
54. **Mohsen Kashe-Farahani** :: *Symbolic softwares for Lie symmetry analysis*, IUST, 2013-2015.
55. **Mohammad-Amin Sedghi** :: *Symmetry of nonlinear control systems and its applications*, IUST, 2014-2016.
56. **Fatemeh-Sadat Mousavi-Nejad** :: *Special conformal group and nonlinear Poisson equation*, IUST, 2014-2016.
57. **Ali Asgari** :: *On the “D.J. Hoff and P.J. Olver, Automatic solution of jigsaw puzzles, Journal of Mathematical Imaging and Vision volume 49, 234250, 2014”*, IUST, 2014-2016.
58. **Kourosh Torab-Parhiz** :: *Geometric study of vector fields*, IUST-Noor, 2014-2017.
59. **Amin Taghi-Nejad** :: *Cartan’s view of Klein’s Erlangen program*, IUST-Noor, 2014-2016.
60. **Dariush Rahman-Setayesh** :: *Geometric structure of n -bar linkages*, IUST, 2015-2017.
61. **Saeed Ghanbari** :: *On the “E. Hebey, Sobolev spaces on Riemannian manifolds, Lecture Notes in Mathematics, 1635. Springer-Verlag, Berlin, 1996”*, IUST, 2016-2019.
62. **Hossein Beyranvand** :: *On the “A. Ruiz, C. Muriel and P.J. Olver, Commutator of C^∞ -symmetries and reduction of Euler-Lagrange equations, J. Phys. A 51, 2018”*, IUST, 2016-2018.

63. **Somayyeh Soltani** :: *The Einstein-Cartan theory*, IUST-Noor, 2016-2018.
64. **Shabnam Shaban-Zadeh** :: *Matrix Lie groups*, IUST-Noor, 2016-2019.
65. **Seyyed-Asghar Taghavi** :: *An applied veiw to moving frame theory*, IUST, 2017-2020.
66. **Seyede-Zeynab Afarin** :: *On the “K. Crane, C. Weischedel and M. Wardetzky, The heat method for distance computation, Communications of the ACM 60 (11) 90-99, 2017”*, IUST, 2018-2020.
67. **Mehdi Mirzavand** :: *On the “N. Sharp, Y. Soliman and K. Crane, The vector heat method, ACM Trans. Graph., Vol. 38, No. 3, Article 00. Publication date: June 2019.”*, IUST, 2018-2020.
68. **Ali-Akbar Ammi** :: *On the “M.Nadjafikhah and M. Jafari, Computation of partially invariant solutions for the Einstein Walker manifolds identifying equations, Commun Nonlinear Sci Numer Simulat 18 (2013) 3317-3324”*, IUST, 2019-2021.
69. **Payam Pashapour** :: *On the “N. Sharp and K. Crane, Varational surface cutting, ACM Trans. Graph., Vol. 37, No. 4, Article 156. 2018”*, IUST, 2019-2022.
70. **Fatemeh Asadi** :: *Applications of fractals in architecture*, IUST, 2019-2021.
71. **Roya Tarighatnia** :: *Computational modeling of curves and surfaces*, IUST, 2019-2021.
72. **Hosein Zarei** :: *Content analysis of high school geometry in Iran and the United States*, IUST, 2020-2022.
73. **Fateme Basiri** :: *Interactive seamless fusion of multiview video textures*, IUST, 2020-2023.
74. **Marzieh Safari** :: *Poisson Surface Reconstruction with Envelope Constraints*, IUST, 2021-2023.
75. **Robab Rajabzadeh** :: *Lie symmetry analysis of fractional differential equations*, IUST, 2021-2023.
76. **Hamid-Reza Karbasian** :: *Elementary geometric algorithms by Phyton*, IUST, 2021-2024.
77. **Fatemeh Ramezani** :: , IUST, 2022-.
78. **Seyed-Ali Musheh** :: , IUST, 2022-.

Projects:

1. *Cooling: A package for material engineering*, Technical report, Farda Industrial Company, 1372 (1993).
2. *Finite order geometric structures*, Technical report, IUST, 1374 (1995). (Collaborated by **E. Esrafilian**)
3. *Teaching calculus I by Maple*, Technical report, IUST, 1379 (2000).
4. *Calculation methods in equivalence problem of second order equations*, Technical report, IUST, 1380 (2001).
5. *Classification of 3rd order curves up to Euclidean transformations*, Technical report, IUST, 1383 (2004).
6. *Calculation in Cartan-Kähler theory*, Technical report, IUST, 1384 (2005).
7. *Exterior differential systems and its applications in geometry*, Technical report, IUST, 1385 (2006).
8. *Cartan’s equivalence problem and its applications in differential equations*, Technical report, IUST, 1385 (2006). (Collaborated by **R. Aghayan**, **A.R. Forough** and **A. Mahdipour-Sh.**)
9. *Solution of equivalence problem and P.J. Olver*, Technical report, IUST, 1386 (2007).
10. *Classification of solutions of partial differential equations by Lie algebras*, Technical report, IUST, 1387 (2008).

11. *Banach Lie groups and Banach Lie algebras and their applications in symmetries of differential equations*, Technical report, IUST, 1388 (2009).
12. *Symmetry in distributions and its application in differential equations*, Technical report, IUST, 1389 (2010).
13. *Local symmetries and its applications*, Technical report, KIAU, 1389 (2010). (Collaborated by **F. Ahangari**)
14. *Potential symmetries and conservation laws for two dimensional non-linear heat equations*, Technical report, VPB, 1389 (2010). (Collaborated by **R. Bakhshandeh-Ch.**)
15. *Approximate symmetries of differential equations and its applications in evolutionary differential equations*, Technical report, IUST, 1390 (2011).
16. *Nonclassical symmetries of differential equations and its applications*, Technical report, IUST, 1391 (2012).
17. *Application of Lie symmetries in dynamical systems*, Technical report, IUST, 1392 (2013).
18. *Application of Lie symmetries in wavelet and its applications in differential equations*, Technical report, IUST, 1393 (2014).
19. *Application symmetries in analysing of dynamical systems*, Technical report, IUST, 1394 (2015).
20. *Study dynamical systems by Lie symmetries*, Technical report, IUST, 1395 (2016).
21. *Application of symmetries in wavlets*, Technical report, IUST, 1396 (2017).
22. *Analytic Solution of Partial Order PDDEs*, IUST, (2018).
23. *Improving the differential geometric computing methods*, Technical report, IUST, 1397 (2020).
24. *Symmetry study of fractional differential equations*, Technical report, IUST, 1398 (2021).

Books:

- [1] *Simple Geometry*, Madreseh Pub. Co., First edition, 1997, Persian. ISBN : 978-964-353-336-6
- [2] *Preparing for exams: Calculus 1*, Bahman Borna Pub. Co., First edition, 2000, Persian. (Collaborated by **A. Rajabi-A.**) ISBN: 964-928-022-7
- [3] *Preparing for exams: Numerical Computations*, Bahman Borna Pub. Co., 2nd edition, 2000, Persian. (Collaborated by **U. Ebrahimdoost-K.** and **Ali Rajabi-A.**) ISBN: 964-928-025-1
- [4] *Simple differential geometry*, Sahele Andisheye Tehran Pub. Co., 2nd edition, 2002, Persian. ISBN: 964-944-715-6
- [5] *Preparing for exams: Calculus 2*, Sahele Andisheye Tehran Pub. Co., 2nd edition, 2003, Persian. ISBN: 964-944-711-3
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