Fariba Ranjbar

Education

Current	Ph.D. Candidate in Computer Science, **Sapienza University of Rome**, Rome Major: Boolean Network Tomography and Complexity Theory Advisor: Prof. Nicola Galesi
June 2015	Master of Science in Pure Mathematics, **University of Tehran**, Tehran Thesis: "Inverse Problem of Galois Theory" Advisor: Prof. Mohammad Reza Darafsheh
June 2013	Bachelor of Science in Pure Mathematics, **University of Tehran**, Tehran Thesis: "Boolean Gröbner Bases" Advisor: Dr. Hossein Sabzrou

Research Interests

Algorithms for network fault detection
Network Tomography
Graph Theory
Combinatorial Optimization
Complexity Theory in Computer Science
Mathematical techniques applied to medical imaging
Research in applications of mathematics to medical sciences

Work and Teaching Experience

Fall 2014	Linear Algebra, University of Tehran, Tehran, Iran
Fall 2013	Differential Analysis, University of Tehran, Tehran, Iran
Fall 2013	Foundations of Mathematics, University of Tehran, Tehran, Iran

Scholarships, Awards and Honors

October 2019	Grant of Euro 1.100 (The "Projects for Research Start-up - Type 1")
June 2017	Fellowship for three-year-full-time PhD position in Computer Science
June 2015	Ranked 2nd in M.Sc.
June 2013	Ranked 2nd in B.Sc. and being exempted from Master Entrance exam

International Presentations

• "Vertex-Connectivity for Node Failure Identification in Boolean Network Tomography", ALGOSENSORS 2019 : 15th International Symposium on Algorithms and Experiments for Wireless Sensor Networks, Munich, Germany; September 12, 2019.

• "Achievability of the assessment of the left ventricular myocardial force vector field by Lagrangian mathematical equations of elasticity based on echocardiography", European Society of Echocardiography Congress, Seville, Spain; December 4, 2015.

• "Geometric Langlands Correspondence of Elliptic Curves (Abelian Group Schemes of Dimension 1) over Finite Fields", The Third Biennial International Group Theory Conference, Ferdowsi University of Mashhad, Iran; January 28, 2015.

National Presentations

• "Node Failure Identification in Boolean Network Tomography", Presentation for the admission to the 3rd year of PhD, Fall 2019, **Sapienza University of Rome**.
• "Irreducible Characters of a Group", Seminar course, Fall 2014, **University of Tehran**.
• "The Open Mapping Theorem", Real Analysis Presentation, Fall 2013, **University of Tehran**.
• "Boolean Gröbner Bases", Algebraic Geometry Presentation, Spring 2013, **University of**

Tehran.

Conferences Attended

• WomENcourage 2019, Italy; September 16-18, 2019.
https://womencourage.acm.org/2019/

• ALGOSENSORS 2019 : 15th International Symposium on Algorithms and Experiments for Wireless Sensor Networks, Germany; September 9-13, 2019.
https://algo2019.ak.in.tum.de/index.php/menue-algosensors

• The Swedish Summer School in Computer Science (S^3CS) 2018, Sweden; August 5-11, 2018.
https://s3cs.eecs.kth.se/2018/

• Workshop On Ramsey Theory and Computability, Rome Notre Dame Global Gateway, Italy; July 9-13, 2018.
https://www3.nd.edu/~cholak/Colosseum.html

• A Workshop in honour of Jànos Körner's research world, From Information Theory to Combinatorics, Sapienza University of Rome, Italy; November 10, 2017.
http://wwwusers.di.uniroma1.it/~galesi/WS.html

• 8th Seminar on Geometry and Topology, Iranian Mathematical Society, Iran; December 15-17, 2015.
http://conf.ims.ir/gt8/index.php?slc_lang=en

• Lectures of Professor Cedric Villani the Fields Medalist of 2010, Iran; May 9-17, 2015.

• The Third Biennial International Group Theory Conference 2015, Ferdowsi University of Mashhad, Iran; January 2015.
http://3bigtc.grouptheory.ir/index.php?slc_lang=en&sid=1

• The 45th annual Iranian Mathematics Conference, Faculty of Mathematics, Statistics and Computer Science, Semnan University, Iran; August 2014.

Languages

Persian:	Mothertongue
English:	Fluent
Arabic:	Basic Knowledge
Italian:	Basic Knowledge

Computer Skills

General Computer Knowledge:	Windows, Microsoft Office Skills, Adobe Photoshop, LaTeX
Programming:	Python, Matlab, Singular, C++(familiar)

Hobbies and Activities

Music, Books, Movies, Hiking, Volleyball, Travelling

Publications

• N. Galesi, F. Ranjbar, Counting and Localizing Failure Nodes in Networks using Path-Separability. Submitting.

• N. Galesi, F. Ranjbar, M. Zito, Vertex-Connectivity for Node Failure Identification in Boolean Network Tomography, ALGOSENSORS 2019 : 15th International Symposium on Algorithms and Experiments for Wireless Sensor Networks, (2019), 79-95.

• N. Galesi, F. Ranjbar, Tight Bounds for Maximal Identifiability of Failure Nodes in Boolean Network Tomography, In IEEE, editor, 2018 IEEE 38th International Conference on Distributed Computing Systems, (2018), 212-222.

• S. Ranjbar, M. Karvandi, F. Ranjbar, M. Ghafaripour, S.A. Hassantash and M. Fouroghi, Achievability of the assessment of the left ventricular myocardial force vector field by Lagrangian mathematical equations of elasticity based on echocardiography, Eur Heart J Cardiovasc Imaging Abstracts Supplement (2015) 16 (Supplement 2), ii17.

• Mersedeh Karvandi, Saeed Ranjbar, Mehrdad Shahshahani, Arash Rastegar, Seyed Ahmad Hassantash, Mahnoosh Foroughi and Fariba Ranjbar, A research proposal in mathematical modeling applied to heart and mathematical concepts of mechanisms of heart, American Journal of Science and Technology, (2014); 1(1): 30-35.

• F. Ranjbar, S. Ranjbar, Inverse Galois Problem and Significant Methods (2015). arXiv: 1512.08708.

• S. Ranjbar, and F. Ranjbar, Geometric Langlands correspondence of Elliptic curves (Abelian Group Schemes of Dimension 1) over Finite Fields, Proceedings of the 3rd Biennial International Group Theory Conference (3BIGTC), Ferdowsi University of Mashhad, I.R.Iran (2015), 62-65.