Niloufar Ahmadypour — *Curriculum Vitae*

Contact Information

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Research Interests

- **Information Theory:** Classical Information Theory, Applied Probability, Network Information Theory, Network Coding, Source Coding
- **Theoretical Computer Science:** Graph Theory, Algebraic Graph Theory, Combinatorial Optimization, Algorithmic Game Theory
- **Data Science:** High-Dimensional Statistics, Theoretical Machine Learning

Positions

Assistant Professor of Electrical Engineering, Communications, Isfahan University of Technology (IUT)   2023-Present

Postdoctoral Researcher, Tehran Institute for Advanced Studies (TeIAS), PI: Prof. Amin A. Gohari   Oct. 2021 - Oct. 2022

Education

Sharif University of Technology, Tehran, Iran

- **Ph.D. in Electrical Engineering - Communications Systems**   2015 - 2021

   Dissertation :
   "Theoretical Foundations of Communication of Numbers in Finite Time", under supervision of Prof. Amin A. Gohari.

   Relevant Coursework :
   Combinatorial Optimization, Network Information Theory, Theory of Machine Learning, Sparse Stochastic Process, Probabilistic Methods in Combinatorics, Network Coding, High-Dimensional Probability (Audit), Modern Algorithms (Audit).

Isfahan University of Technology (IUT), Isfahan, Iran

- **M.Sc. in Electrical Engineering - Communications Systems**   2013 - 2015

   Thesis :
   "Source Coding Based Caching Methods", under supervision of Prof. M. Khosravifard.

   Relevant Coursework :
   Algebraic Graph Theory, Computational Complexity, Cryptography

- **B.Sc. in Electrical Engineering - Communications**   2009 - 2013
- **B.Sc. in Pure Mathematics**   2010 - 2014

   Thesis :
   "Sufficient Conditions of Existence of Fix-Free Codes", under supervision of Prof. M. Khosravifard

   Relevant Coursework :
   Extremal Combinatorics (Grad.), Information Theory, Graph Theory, Mathematical Analysis I, Mathematical Analysis II, Topology I, Topology II (Grad.)

Farzanegan Amin High School, Isfahan, Iran   2005 - 2009
Affiliated with the National Organization for the Development of Exceptional Talents (NODET)

- **Diploma in Mathematics and Physics Discipline**

Honors and Awards

- **INSF Fellowship**, Iran National Science Foundation.   2017
- **Admission Offer** to Ph.D. program in EE Departments at Sharif University of Technology without participating in the Nationwide Graduate Entrance Exam   2015

- **Selected as "Top Talent"** by Iran National Elites Foundation, winning an education grant 2015
- **Second Prize** in 21st International Mathematical Competition (**IMC**), Bulgaria   2014
- **Bronze Medal** in 38th Iran National Mathematical Competition for University Students, Mahan, Iran   2014
- **Admission Offer** to Master program in ECE Departments at Isfahan University of Technology without participating in the Nationwide Graduate Entrance Exam   2013
- **Third Prize** in 20th International Mathematical Competition (**IMC**), Bulgaria   2013
- **Silver Medal** in 37th Iran National Mathematical Competition for University Students, Semnan, Iran   2013
- **Honorable Diploma** from XX Summer Conference of International Mathematical Tournament of Towns with Noticeable Advance Degree, Mendeleevo, Russia   2008
- **Honorable Diploma** from XIX Summer Conference of International Mathematical Tournament of Towns with Investigation Degree (Together with T. Analouei, M. Khosravi), Minsk, Belarus 2007

RESEARCH AND PUBLICATIONS

- N. Ahmadypour and A. Gohari, "Transmission of a Bit Over a Discrete Poisson Channel With Memory," in IEEE Transactions on Information Theory, vol. 67, no. 7, pp. 4710-4727, July 2021, doi: 10.1109/TIT.2021.3077872.
- N. Ahmadypour and A. Gohari, "Transmission of a Bit over a Discrete Poisson Channel with Memory", 2020 IEEE Information Theory Workshop (ITW).
- N. Ahmadypour and A. Gohari, "Multi-Way Number Partitioning: an Information-Theoretic View" arXiv preprint arXiv:2009.02710 (2020, The research is still in progress).

TEACHING AND WORK EXPERIENCES

- Electrical and Computer Engineering Department, Isfahan University of Technology

. Wireless Communications.	Spring 2024
. Discrete Structures.	Spring 2024
. Signals and Systems.	Fall 2023
. Mathematics for Data Science (Grad.).	Fall 2023
. Wireless Communications.	Spring 2023

- **Member of the High-Dimensional Statistics Study Group**, Tehran Institute for Advanced Studies (TeIAS), Advisor: Prof. Amin A. Gohari   2020-2021
- **Instructor**, Electrical Engineering Department, Sharif University of Technology

. Fundamentals of Electrical Engineering.	Spring 2019

- **Teaching Assistant**, Sharif University of Technology,   2016-2018
    . Information Theory, Fall 2016.
    . Probabilistic Analysis in Communications, Spring 2017.
    . Network Information Theory, Fall 2018.
- **Lab Instructor**, Electrical Engineering Department, Isfahan University of Technology Circuits Lab.   2015

SKILLS

- **Programming Languages:** C, C++, Familiar with C#, R and Python
- **Computer Softwares:** MATLAB, OrCAD, Proteus

REFERENCES   Available upon request