Farhad Shirani Chaharsooghi

CONTACT INFORMATION

ECE Department,
North Dakota State University,
1411 Centennial Blvd,
Fargo, ND 58102

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E-mail: f.shiranichaharsoogh@ndsu.edu
Homepage: `https://pi-colab.github.io/`

The first six pages contain additional information requested by the FIU Office of Research Integrity. The next pages include information in my original CV.

1- "Every institution of higher education attended"

University of Michigan, Ann Arbor, MI

- Ph.D., Electrical Engineering: Systems, 2012-2017
  Advisor: S. Sandeep Pradhan
  Ph.D. Thesis: Structural Results for Coding Over Communication Networks
  GPA: 4.00
- M.Sc., Mathematics, 2014-2016
  Major: Applied Mathematics
  GPA: 4.00
- M.Sc., Electrical Engineering: Systems, 2011-2012
  Major: Communications
  GPA: 4.00

Sharif University of Technology, Tehran, Iran

- B.Sc., Electrical Engineering, 2007-2011
  B.Sc., Thesis: A New Method for Variable Elimination for Systems of Inequations
  Advisor: M. R. Aref

2- "All previous employment since your 18th birthday"

CURRENT APPOINTMENT

North Dakota State University, Fargo, ND

- Assistant Professor — Aug. 2020 - Present

PREVIOUS APPOINTMENTS

New York University, New York, NY

- Research Assistant Professor — Sep. 2017 - Aug. 2020

University of Michigan, Ann Arbor, MI

- Lecturer/ Postdoctoral Research Fellow — Jan 2017- Aug 2017

3- "A complete list of all published material"

PUBLICATIONS, SUBMISSIONS AND PREPRINTS

Journals Publications

[J1] **F. Shirani Chaharsooghi**, S. Pradhan, *On the Sub-optimality of Single-Letter Coding in Networks*, IEEE Transactions on Information Theory, vol. 65, no. 10, pp. 6115-6135, Oct. 2019.

[J2] H. Heidari, **F. Shirani Chaharsooghi**, S. Pradhan, *Quasi Structured Codes for Multi-Terminal Communications*, IEEE Transactions on Information Theory, vol. 65, no. 10, pp. 6263-6289, Oct. 2019.

[J3] S. Shahsavari, **F. Shirani Chaharsooghi**, E. Erkip, *A General Framework for Temporal Fair User Scheduling in NOMA Systems*, IEEE Journal on Selected Topics on Signal Processing, vol. 13, no. 3, pp. 408-422, 2019.

[J4] **F. Shirani Chaharsooghi**, S. Pradhan, *An achievable rate-distortion region for multiple descriptions source coding based on coset codes*, IEEE Transactions on Information Theory, vol. 64, no. 5, pp. 3781-3809, 2018.

[J5] **F. Shirani Chaharsooghi**, S. Pradhan, *A new achievable rate-distortion region for distributed source coding*, IEEE Transactions on Information Theory, pp.1-1 (Early Access), 2021.

[J6] **F. Shirani Chaharsooghi**, S. Garg, E. Erkip, *A Concentration of Measure Approach to Correlated Graph Matching*, IEEE Journal on Selected Areas in Information Theory, pp. 338-351, 2021

[J7] A. Khalili, **F. Shirani Chaharsooghi**, E. Erkip, Y. C. Eldar, *MIMO Networks with One-Bit ADCs: Receiver Design and Communication Strategies*, IEEE Transactions on Communications, pp.1-1 (Early Access), 2021.

[J8] M. Shariatnasab, **F. Shirani Chaharsooghi**, E. Erkip, *Fundamental Privacy Limits in Bipartite Networks under Active Attacks*, Accepted in IEEE Journal on Special Areas in Communications (JSAC), 2021.

[J9] S. Shahsavari, **F. Shirani Chaharsooghi**, E. Erkip, *Opportunistic Temporal Fair Mode Selection and User Scheduling in Full-duplex Systems*, Accepted in IEEE Journal on Special Areas in Communications (JSAC), 2021.

Book Publications

[B1] Pradhan, S. Sandeep, Arun Padakandla, and **F. Shirani Chaharsooghi**, *An algebraic and probabilistic framework for network information theory*, Foundations and Trends in Communications and Information Theory 18.2, pp. 173-379, 2020

Conference Publications

[C1] M. Shariatnasab, **F. Shirani Chaharsooghi**, Z. Anwar, *Privacy Limits in Power-Law Bipartite Networks under Active Fingerprinting Attacks*, IEEE International Symposium on Information Theory (ISIT), Accepted and to be published in June 2022.

[C2] **F. Shirani Chaharsooghi**, S. S. Pradhan, *Lattices from Linear Codes: Source and Channel Networks*, IEEE International Symposium on Information Theory (ISIT), Accepted and to be published in June 2022.

[C3] **F. Shirani Chaharsooghi**, H. Aghasi, *MIMO Systems with One-bit ADCs: Capacity Gains using Nonlinear Analog Operations*, IEEE International Symposium on Information Theory (ISIT), Accepted and to be published in June 2022.

[C4] M. Shariatnasab, **F. Shirani Chaharsooghi**, S. Garg, E. Erkip, *On Graph Matching Using Generalized Seed Side-Information*, IEEE International Symposium on Information Theory (ISIT), pp. 2726-2731, 2021.

[C5] S. Shahsavari, **F. Shirani Chaharsooghi**, A. Khojastepour, E. Erkip, *Opportunistic Temporal Fair Mode Selection and User Scheduling for Full-duplex Systems*, 2019 IEEE 30th Annual International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC), pp. 1-7, 2019.

[C6] **F. Shirani Chaharsooghi**, S. Garg, E. Erkip, *A Concentration of Measure Approach to Database De-anonymization*, 2019 IEEE International Symposium on Information Theory (ISIT), pp. 2748-2752, 2019.

[C7] A. Khalili, **F. Shirani Chaharsooghi**, E. Erkip, Y. C. Eldar, *Tradeoff Between Delay and High SNR Capacity in Quantized MIMO Systems*, 2019 IEEE International Symposium on Information Theory (ISIT), pp. 597-601, 2019.

[C8] A. Khalili, **F. Shirani Chaharsooghi**, E. Erkip, Y. C. Eldar, *On Multiterminal Communication over MIMO Channels with One-bit ADCs at the Receivers*, 2019 IEEE International Symposium on Information Theory (ISIT), pp. 602-606, 2019.

[C9] S. Shahsavari, **F. Shirani Chaharsooghi**, E. Erkip, *On the Fundamental Limits of Multi-user Scheduling under Short-term Fairness Constraints*, 2019 IEEE International Symposium on Information Theory (ISIT), pp. 408-422, 2019.

[C10] **F. Shirani Chaharsooghi**, S. Garg, E. Erkip, *Matching graphs with community structure: a concentration of measure approach*, 56th IEEE Annual Allerton Conference on Communication, Control, and Computing, pp. 1028-1035, 2018

[C11] S. Shahsavari, **F. Shirani Chaharsooghi**, E. Erkip, *Opportunistic temporal fair scheduling for non-orthogonal multiple access*, 56th IEEE Annual Allerton Conference on Communication, Control, and Computing, pp. 391-398, 2018

[C12] **F. Shirani Chaharsooghi**, S. Pradhan, *Lattices from linear codes and fine quantization: general continuous sources and channels*, IEEE International Symposium on Information Theory (ISIT), pp. 2356-2360, 2018.

[C13] **F. Shirani Chaharsooghi**, S. Garg, E. Erkip, *Typicality matching for pairs of correlated graphs*, IEEE International Symposium on Information Theory (ISIT), pp. 221-225, 2018.

[C14] M. Heidari, **F. Shirani Chaharsooghi**, S. Pradhan, *Bounds on the effective-length of optimal codes for interference channel with feedback*, IEEE International Symposium on Information Theory (ISIT), pp. 1126-1130, 2018.

[C15] **F. Shirani Chaharsooghi**, S. Garg, E. Erkip, *Optimal active social network de-anonymization using information thresholds*, IEEE International Symposium on Information Theory (ISIT), pp. 1445-1449, 2018.

[C16] **F. Shirani Chaharsooghi**, S. Garg, E. Erkip, *Seeded graph matching: efficient algorithms and theoretical guarantees*, 51st Asilomar Conference on Signals, Systems, and Computers, pp. 253-257, 2017.

[C17] **F. Shirani Chaharsooghi**, S. Garg, E. Erkip, *An information theoretic framework for active de-anonymization in social networks based on group memberships*, 55th Annual Allerton Conference on Communication, Control, and Computing, pp. 470-477, 2017.

[C18] **F. Shirani Chaharsooghi**, S. Pradhan, *On the sub-optimality of single-letter coding in multi-termianl communications*, IEEE International Symposium on Information Theory (ISIT), pp. 1823-1827, 2017.

[C19] **F. Shirani Chaharsooghi**, S. Pradhan, *On the correlation between boolean functions of random variables*, IEEE International Symposium on Information Theory (ISIT), pp. 1301-1305, 2017.

[C20] M. Heidari, **F. Shirani Chaharsooghi** , S. Pradhan, *A new achievable rate region for the multiple-access channel with states*, IEEE International Symposium on Information Theory (ISIT), pp. 36-40, 2017.

[C21] M. Heidari, **F. Shirani Chaharsooghi** , S. Pradhan, *On the necessity of structured codes for communication over MAC with feedback*, IEEE International Symposium on Information Theory (ISIT), pp. 2298-2302, 2017.

[C22] **F. Shirani Chaharsooghi** , S. Pradhan, *Trade-off between communication and cooperation in the interference channel*, IEEE International Symposium on Information Theory (ISIT), pp. 2214-2218, 2016.

[C23] **F. Shirani Chaharsooghi** , M. Heidari, S. Pradhan, *Quasi linear codes: application to point-to-point and multi-terminal source coding*, IEEE International Symposium on Information Theory (ISIT), pp. 730-734, 2016.

[C24] M. Heidari, **F. Shirani Chaharsooghi** , S. Pradhan, *New sufficient conditions for multiple-access channel with correlated sources*, IEEE International Symposium on Information Theory (ISIT), pp. 2019-2023, 2016.

[C25] M. Heidari, **F. Shirani Chaharsooghi** , S. Pradhan, *Beyond group capacity in multi-terminal communications*, IEEE International Symposium on Information Theory (ISIT), pp. 2081-2085, 2015.

[C26] **F. Shirani Chaharsooghi** , M. Heidari, S. Pradhan, *New lattices for multiple-descriptions*, IEEE International Symposium on Information Theory (ISIT), pp. 1580-1584, 2015.

[C27] **F. Shirani Chaharsooghi**, S. Pradhan, *Finite-length gains in distributed source coding*, IEEE International Symposium on Information Theory (ISIT), pp. 1702-1706, 2014.

[C28] **F. Shirani Chaharsooghi** , S. Pradhan, *An achievable rate-distortion region for the multiple-descriptions problem*, IEEE International Symposium on Information Theory (ISIT), pp. 576-580, 2014.

[C29] **F. Shirani Chaharsooghi** , A. Ghasemian Sahebi, S. Pradhan, *Distributed source coding in absence of common components*, IEEE International Symposium on Information Theory (ISIT), pp. 1362-1366, 2013.

[C30] **F. Shirani Chaharsooghi** , M. Emadi, M. Zamanighomi and M. R. Aref, *A new method for variable elimination in systems of inequations*, IEEE International Symposium on Information theory (ISIT), pp. 1215-1219, 2011.

[C31] M. Zamanighomi, M. Emadi, **F. Shirani Chaharsooghi**, M. R. Aref, *Achievable rate region for multiple access channel with correlated channel states and cooperating encoders*, IEEE Information Theory Workshop (ITW), pp. 628-632, 2011.

4- "A complete list of all current and pending research funding from any source, including details about the research, your role, funding source, and amount."

RESEARCH SUPPORT

Title: *Collaborative Research: CIF: Small: A New Paradigm for Distributed Information Processing, Simulation and Inference in Networks: The Promise of Law of Small Numbers*, 2021-2024
Investigators: F. Shirani Chaharsooghi
Role: Principal Investigator
Source: NSF: Communications and Information Foundations,
Total Awarded: $500,000 (NDSU share $250,000),
Abstract: The project is based on two research thrusts that are expected to provide a deeper understanding of the fundamental laws that govern the processing of information. In the first thrust,

a new framework is developed based on two conceptual innovations: (i) A characterization of the fundamental memory structure of information processing functions using a novel notion of dependency spectrum, and (ii) Development of a new law of small numbers, which describes a fundamental interplay between the dependency spectrum and distributed cooperation. In particular, the project uncovers a trade-off between the correlation-preserving ability of distributed information-processing functions — which is necessary for distributed cooperation — and their ability to efficiently perform individual information-processing tasks. The second thrust addresses two application scenarios. (i) Building upon the concept of dependency spectrum, novel techniques are developed for distributed data compression, and transmission of information in interference and broadcast networks. (ii) The fundamental limits and practical design of distributed randomness generation algorithms are derived. These innovations lead to significant improvements over the state of the art both in terms of characterizations of asymptotic performance limits and constructive practical algorithms.

Title: *CIF: Small: An Information Theoretic Framework for Web Privacy*, 2018-2021
Investigators: E. Erkip, **F. Shirani Chaharsooghi**, S. Garg,
Role: Co-Principal Investigator
Source: NSF: Communications and Information Foundations,
Amount Awarded: $487,000,
Abstract: This project addresses web privacy from an information theoretic perspective. Based on statistical models for online activity and social network connections, the project develops a unified information theoretic framework to quantify the privacy risk that web users face from online attacks. The proposed research addresses internet privacy through three interrelated thrusts focusing on fingerprinting, social network de-anonymization and synergistic attacks, and provides an evaluation plan to experiment with real-world networks.

Title: *Large Deviation Methods for Learning Network Alignment: Fundamental Limits and Efficient Algorithms*, 2020
Investigator: F. Shirani Chaharsooghi,
Role: Co-Principal Investigator,
Source: North Dakota EPSCoR: Established Program to Stimulate Competitive Research,
Amount Awarded: $10,000,
Abstract: This grant provides seed funding for preliminary research in preparation for an NSF grant proposal focusing on two projects, 1) Graph alignment algorithms based on large deviation methods, and 2) Derivation of necessary and sufficient conditions for successful alignment.

5- "List and description of any non-university professional activities."

- **Technical Program Committee:** International Symposium on Information Theory (ISIT), 2021, Information Theory Workshop (ITW), 2022
- **Outreach Committee Member:** Information Theory Society, 2018-2021
- **Outreach Committee Chair:** Information Theory Society, 2021-2023
- **Membership Committee Member:** Information Theory Society, 2021-2023
- **Reviewer**: IEEE Transactions on Information Theory, IEEE Transactions on Communications, IEEE Communication Letters, IEEE Transactions on Forensics and Security,, International Symposium on Information Theory.
- **Organizer:** IEEE International Symposium on Information Theory (ISIT) carrier mentorship event 2021
- **Co-Chair** Multiple Access Channels, Multiuser Information Theory, and Network Information Theory, ITA 2015

Invited Talks

- "Fundamental Limits of Privacy in Social Networks", iLunch Seminar Series, University of Maine, 2020

- "Fundamental Limits and Matching Algorithms for Online Fingerprinting and Database Alignment", GRAND Workshop in Maynooth University, Ireland, 2019
- "Social network de-anonymization based on group memberships: An information theoretic approach", ITA Workshop in UCSD, 2018
- "On the Structure of Optimality Achieving Codes in Multi-terminal Communications", ITA Graduation Day Talk, Nominated by the University of Michigan to present during "Graduation Day", ITA Workshop in UCSD, 2017
- "Preserving Common Information", SPeecs Seminars Series, University of Michigan, 2016
- "Distributed Source Coding in Absence of Common Components", Stanford University, Feb. 2014
- "Distributed Source Coding in Absence of Common Components", DSSD, Menlo Park, CA, 2014

5- "Any affiliation with an institution or program in a foreign country."
Member of IEEE Information Theory Society

Information included in the original CV.

Current Appointment

North Dakota State University, Fargo, ND

- Assistant Professor — Aug. 2020 - Present

Previous Appointments

New York University, New York, NY

- Research Assistant Professor — Sep. 2017 - Aug. 2020

University of Michigan, Ann Arbor, MI

- Lecturer/ Postdoctoral Research Fellow — Jan 2017- Aug 2017

Education

University of Michigan, Ann Arbor, MI

- Ph.D., Electrical Engineering: Systems, 2012-2017
  Advisor: S. Sandeep Pradhan
  Ph.D. Thesis: Structural Results for Coding Over Communication Networks
  GPA: 4.00
- M.Sc., Mathematics, 2014-2016
  Major: Applied Mathematics
  GPA: 4.00
- M.Sc., Electrical Engineering: Systems, 2011-2012
  Major: Communications
  GPA: 4.00

Sharif University of Technology, Tehran, Iran

- B.Sc., Electrical Engineering, 2007-2011
  B.Sc., Thesis: A New Method for Variable Elimination for Systems of Inequations
  Advisor: M. R. Aref

Research Interests

Privacy and Security, Wireless Communications, Information Theory, Learning Theory

Research Experience

North Dakota State University, Fargo, ND

- Assistant Professor, Aug. 2020- Persent
  Director at II-CoLab: Privacy, Inference, and Communications Laboratory

New York University, Brooklyn, NY

- Research Assistant Professor, Sep. 2017- Aug. 2020
  Member at NYU WIRELESS

University of Michigan, Ann Arbor, MI

- Postdoctoral Research Fellow, Jan 2017-Aug 2017
- Graduate Student Research Assistant, 2012-2016
  Advisor: Sandeep Pradhan

Sharif University of Technology, Tehran, Iran

- Member of Information Science and Security Lab 2010-2012
  Advisor: Mohammadreza Aref

Research Support

Collaborative Research: CIF: Small: A New Paradigm for Distributed Information Processing, Simulation and Inference in Networks: The Promise of Law of Small Numbers, 2021-2024
Investigators: **F. Shirani Chaharsooghi**
NSF: Communications and Information Foundations,
Total Awarded: $500,000 (NDSU share $250,000)

CIF: Small: An Information Theoretic Framework for Web Privacy, 2018-2021
Investigators: E. Erkip, **F. Shirani Chaharsooghi**, S. Garg,
NSF: Communications and Information Foundations,
Amount Awarded: $487,000

Large Deviation Methods for Learning Network Alignment: Fundamental Limits and Efficient Algorithms, 2020
Investigator: **F. Shirani Chaharsooghi**,
ND EPSCoR: Established Program to Stimulate Competitive Research,
Amount Awarded: $10,000

Teaching Experience

North Dakota State University, Fargo, ND

- Course Instructor, Spring 2022
  ECE 443: Communications I
- Course Instructor, Fall 2020, Fall 2021
  ECE 341: Random Processes
- Course Instructor, Fall 2020
  ECE 748: Introduction to Information Theory

New York University, Brooklyn, NY

- Course Instructor, Spring 2018, Spring 2019
  EL-GY 6063: Information Theory
- Course Instructor, Spring 2020
  EL-GY 9113: Statistical Learning Theory

University of Michigan, Ann Arbor, MI

- Course Instructor Winter 2017
  EECS:501 Probability and Random Processes
- Graduate Student Instructor Fall 2014, Winter 2015
  EECS:501 Probability and Random Processes

Sharif University of Technology, Tehran, Iran

- Teaching Assistant, Winter 2009
  Introduction to Logic Circuits

Awards and Honors

- **Finalist of Towner Award for Outstanding Engineering GSIs,** Winter 2015
  This is an engineering school-wide award for graduate teaching instructors (GSI).
- **Technical Session Award,** Systems Engineering and Communication, Fall 2015
  Engineering Graduate Symposium,
  This is a college-wide annual poster competition at the University of Michigan.
- **EECS Department Graduate Fellowship,** University of Michigan 2013
  This fellowship is awarded to students with outstanding academic background.
  It includes tuition and stipend for one year.
- **EECS Guaranteed Graduate Funding,** University of Michigan 2012-2016
  This award includes guaranteed tuition and stipend for five years in forms of research or teaching assistantships, or departmental fellowships.
- **Ranked** 27^{th}, National university entrance exam among more than 150,000 contestants, Fall 2007
- **Iran's National Elites Foundation Scholarship** 2007-2010
  Members of INEF include students and faculty who have been recipients of scientific prizes in national competitions.
- **President's Honorary Award**
  Presented by president of Sharif University of Technology Fall 2007

Publications, Submissions and Preprints

Journals Publications

[J10] **F. Shirani Chaharsooghi**, S. Pradhan, *On the Sub-optimality of Single-Letter Coding in Networks*, IEEE Transactions on Information Theory, vol. 65, no. 10, pp. 6115-6135, Oct. 2019.

[J11] H. Heidari, **F. Shirani Chaharsooghi**, S. Pradhan, *Quasi Structured Codes for Multi-Terminal Communications*, IEEE Transactions on Information Theory, vol. 65, no. 10, pp. 6263-6289, Oct. 2019.

[J12] S. Shahsavari, **F. Shirani Chaharsooghi**, E. Erkip, *A General Framework for Temporal Fair User Scheduling in NOMA Systems*, IEEE Journal on Selected Topics on Signal Processing, vol. 13, no. 3, pp. 408-422, 2019.

[J13] **F. Shirani Chaharsooghi**, S. Pradhan, *An achievable rate-distortion region for multiple descriptions source coding based on coset codes*, IEEE Transactions on Information Theory, vol. 64, no. 5, pp. 3781-3809, 2018.

[J14] **F. Shirani Chaharsooghi**, S. Pradhan, *A new achievable rate-distortion region for distributed source coding*, IEEE Transactions on Information Theory, pp.1-1 (Early Access), 2021.

[J15] **F. Shirani Chaharsooghi**, S. Garg, E. Erkip, *A Concentration of Measure Approach to Correlated Graph Matching*, IEEE Journal on Selected Areas in Information Theory, pp. 338-351, 2021

[J16] A. Khalili, **F. Shirani Chaharsooghi**, E. Erkip, Y. C. Eldar, *MIMO Networks with One-Bit ADCs: Receiver Design and Communication Strategies*, IEEE Transactions on Communications, pp.1-1 (Early Access), 2021.

[J17] M. Shariatnasab, **F. Shirani Chaharsooghi**, E. Erkip, *Fundamental Privacy Limits in Bipartite Networks under Active Attacks*, Accepted in IEEE Journal on Special Areas in Communications (JSAC), 2021.

[J18] S. Shahsavari, **F. Shirani Chaharsooghi**, E. Erkip, *Opportunistic Temporal Fair Mode Selection and User Scheduling in Full-duplex Systems*, Accepted in IEEE Journal on Special Areas in Communications (JSAC), 2021.

Book Publications

[B2] Pradhan, S. Sandeep, Arun Padakandla, and **F. Shirani Chaharsooghi**, *An algebraic and probabilistic framework for network information theory*, Foundations and Trends in Communications and Information Theory 18.2 (2020): 173-379

Conference Publications

[C32] M. Shariatnasab, **F. Shirani Chaharsooghi**, S. Garg, E. Erkip, *On Graph Matching Using Generalized Seed Side-Information*, IEEE International Symposium on Information Theory (ISIT), Accepted in June 2021.

[C33] S. Shahsavari, **F. Shirani Chaharsooghi**, A. Khojastepour, E. Erkip, *Opportunistic Temporal Fair Mode Selection and User Scheduling for Full-duplex Systems*, 2019 IEEE 30th Annual International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC), pp. 1-7, 2019.

[C34] **F. Shirani Chaharsooghi**, S. Garg, E. Erkip, *A Concentration of Measure Approach to Database De-anonymization*, 2019 IEEE International Symposium on Information Theory (ISIT), pp. 2748-2752, 2019.

[C35] A. Khalili, **F. Shirani Chaharsooghi**, E. Erkip, Y. C. Eldar, *Tradeoff Between Delay and High SNR Capacity in Quantized MIMO Systems*, 2019 IEEE International Symposium on Information Theory (ISIT), pp. 597-601, 2019.

[C36] A. Khalili, **F. Shirani Chaharsooghi**, E. Erkip, Y. C. Eldar, *On Multiterminal Communication over MIMO Channels with One-bit ADCs at the Receivers*, 2019 IEEE International Symposium on Information Theory (ISIT), pp. 602-606, 2019.

[C37] S. Shahsavari, **F. Shirani Chaharsooghi**, E. Erkip, *On the Fundamental Limits of Multi-user Scheduling under Short-term Fairness Constraints*, 2019 IEEE International Symposium on Information Theory (ISIT), pp. 408-422, 2019.

[C38] **F. Shirani Chaharsooghi**, S. Garg, E. Erkip, *Matching graphs with community structure: a concentration of measure approach*, 56th IEEE Annual Allerton Conference on Communication, Control, and Computing, pp. 1028-1035, 2018

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[C40] **F. Shirani Chaharsooghi**, S. Pradhan, *Lattices from linear codes and fine quantization: general continuous sources and channels*, IEEE International Symposium on Information Theory (ISIT), pp. 2356-2360, 2018.

[C41] **F. Shirani Chaharsooghi**, S. Garg, E. Erkip, *Typicality matching for pairs of correlated graphs*, IEEE International Symposium on Information Theory (ISIT), pp. 221-225, 2018.

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[C43] **F. Shirani Chaharsooghi**, S. Garg, E. Erkip, *Optimal active social network de-anonymization using information thresholds*, IEEE International Symposium on Information Theory (ISIT), pp. 1445-1449, 2018.

[C44] **F. Shirani Chaharsooghi**, S. Garg, E. Erkip, *Seeded graph matching: efficient algorithms and theoretical guarantees*, 51st Asilomar Conference on Signals, Systems, and Computers, pp. 253-257, 2017.

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[C48] M. Heidari, **F. Shirani Chaharsooghi** , S. Pradhan, *A new achievable rate region for the multiple-access channel with states*, IEEE International Symposium on Information Theory (ISIT), pp. 36-40, 2017.

[C49] M. Heidari, **F. Shirani Chaharsooghi** , S. Pradhan, *On the necessity of structured codes for communication over MAC with feedback*, IEEE International Symposium on Information Theory (ISIT), pp. 2298-2302, 2017.

[C50] **F. Shirani Chaharsooghi** , S. Pradhan, *Trade-off between communication and cooperation in the interference channel*, IEEE International Symposium on Information Theory (ISIT), pp. 2214-2218, 2016.

[C51] **F. Shirani Chaharsooghi** , M. Heidari, S. Pradhan, *Quasi linear codes: application to point-to-point and multi-terminal source coding*, IEEE International Symposium on Information Theory (ISIT), pp. 730-734, 2016.

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[C53] M. Heidari, **F. Shirani Chaharsooghi** , S. Pradhan, *Beyond group capacity in multi-terminal communications*, IEEE International Symposium on Information Theory (ISIT), pp. 2081-2085, 2015.

[C54] **F. Shirani Chaharsooghi** , M. Heidari, S. Pradhan, *New lattices for multiple-descriptions*, IEEE International Symposium on Information Theory (ISIT), pp. 1580-1584, 2015.

[C55] **F. Shirani Chaharsooghi**, S. Pradhan, *Finite-length gains in distributed source coding*, IEEE International Symposium on Information Theory (ISIT), pp. 1702-1706, 2014.

[C56] **F. Shirani Chaharsooghi** , S. Pradhan, *An achievable rate-distortion region for the multiple-descriptions problem*, IEEE International Symposium on Information Theory (ISIT), pp. 576-580, 2014.

[C57] **F. Shirani Chaharsooghi** , A. Ghasemian Sahebi, S. Pradhan, *Distributed source coding in absence of common components*, IEEE International Symposium on Information Theory (ISIT), pp. 1362-1366, 2013.

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[C59] M. Zamanighomi, M. Emadi, **F. Shirani Chaharsooghi**, M. R. Aref, *Achievable rate region for multiple access channel with correlated channel states and cooperating encoders*, IEEE Information Theory Workshop (ITW), pp. 628-632, 2011.

Service

- **Technical Program Committee:** International Symposium on Information Theory (ISIT), 2021, Information Theory Workshop (ITW), 2022
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- **Outreach Committee Chair:** Information Theory Society, 2021-2023
- **Membership Committee Member:** Information Theory Society, 2021-2023
- **Reviewer**: IEEE Transactions on Information Theory, IEEE Transactions on Communications, IEEE Communication Letters, IEEE Transactions on Forensics and Security,, International Symposium on Information Theory.
- **Organizer:** IEEE International Symposium on Information Theory (ISIT) carrier mentorship event 2021
- **Co-Chair** Multiple Access Channels, Multiuser Information Theory, and Network Information Theory, ITA 2015

Invited Talks

- "Fundamental Limits of Privacy in Social Networks", iLunch Seminar Series, University of Maine, 2020
- "Fundamental Limits and Matching Algorithms for Online Fingerprinting and Database Alignment", GRAND Workshop in Maynooth University, Ireland, 2019
- "Social network de-anonymization based on group memberships: An information theoretic approach", ITA Workshop in UCSD, 2018
- "On the Structure of Optimality Achieving Codes in Multi-terminal Communications", ITA Graduation Day Talk, Nominated by the University of Michigan to present during "Graduation Day", ITA Workshop in UCSD, 2017
- "Preserving Common Information", SPeecs Seminars Series, University of Michigan, 2016
- "Distributed Source Coding in Absence of Common Components", Stanford University, Feb. 2014
- "Distributed Source Coding in Absence of Common Components", DSSD, Menlo Park, CA, 2014

Tutorial Presentations

- "An Information Theoretic Framework for Web Privacy", 2019 IEEE 30th Annual International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC)
- "A Communication Theoretic Framework for Web Privacy", 2019 IEEE Global Communications Conference (Globecom)

Workshops and Poster Presentations

- "Finite Block-Length Codes Trump Random Coding over Infinite Length Blocks", (poster), Shannon Centennial Symposium, University of Michigan, Sep 2016
- "Finite Block-length Gains in Distributed Source Coding", (poster), North American School of Information theory (NASIT) San Diego, CA, Aug 2015

References

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