ANIRUDH RAYAS   CURRICULUM VITAE

CONTACT INFORMATION	1216 E Vista Del Cerro Dr Tempe, AZ 85281

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RESEARCH INTERESTS

High-Dimensional Data Analysis; Networked Systems; Graphical Models; Statistical Machine Learning; Optimization; Multivariate Time Series Analysis

EDUCATION

Arizona State University, Tempe, AZ
Ph.D. in Electrical, Computer and Energy Engineering   2020 - 2025 (Expected)
Committee: Gautam Dasarathy, Oliver Kosut, Lalitha Sankar, Angelia Nedich

Arizona State University, Tempe, AZ
M.S. in Electrical, Computer and Energy Engineering,   2020 - 2024

PES University, Bangalore, India
B.Tech. in Electronics and Communication Engineering   2014 - 2018
Major: Signal Processing
Advisor: Sanjeev Gurugopinath

HONORS AND AWARDS

Sea Award for Best Presentation at Graduation Day, Information Theory and Applications (ITA) Workshop, San Diego   2025

Travel grant to attend North American School on Information Theory (NASIT) at UPenn   2023

NeurIPS Scholar Award, New Orleans   2022

Accepted to Google CS Research Mentorship Program   2022

RESEARCH EXPERIENCE

Los Alamos National Laboratory   Summer 2024
Plasma Physics and Applied Mathematics Group (T-5)
Mentors: Deepjyoti Deka, Marc Vuffray

Arizona State University   Summer 2020
ECEE Department
Mentors: Lalitha Sankar, Gautam Dasarathy
Project: Adversarial Robustness of α-Loss

Indian Institute of Science, IISc   2018 - 2019
ECEE Department
Mentors: Himanshu Tyagi
Project: Polar codes

PAPERS
[GOOGLE SCHOLAR PROFILE](#)

Journal Papers

[J1] **Learning Networks from Wide-Sense Stationary Stochastic Processes**
Anirudh Rayas, Jiajun Cheng, Rajasekhar Anguluri, Deepjyoti Deka, Gautam Dasarathy
Under review at IEEE Transactions on Signal and Information Processing over Networks, 2025
[preprint] [code] [poster]

[J2] **Orthogonality and Graph Divergence Losses Promote Disentanglement in Generative Models**
Ankita Shukla, Rishi Dadhich, Rajhans Singh, Anirudh Rayas, Pouria Saidi, Gautam Dasarathy, Visar Berisha, Pavan Turaga
Accepted at Frontiers in Computer Science, vol. 6, 2024
[paper]

[J3] **Gaussian Graphical Model Selection from Size Constrained Measurements**
Anirudh Rayas, Gautam Dasarathy
In preparation to be submitted to IEEE Transactions on Information Theory, 2025

Conference Papers

[C1] **Structure Learning in Gaussian Graphical Models from Glauber Dynamics**
*Vignesh Tirukkonda, **Anirudh Rayas**, Gautam Dasarathy*
Under review at ISIT, 2025
[preprint]

[C2] **The Sample Complexity of Differential Analysis for Networks that Obey Conservation Laws**
*Jiajun Cheng, **Anirudh Rayas**, Rajasekhar Anguluri, Gautam Dasarathy*
58th Asilomar Conference on Signals, Systems, and Computers, 2024
Preprint available upon request

[C3] **Differential Analysis for Networks Obeying Conservation Laws**
***Anirudh Rayas**, Jiajun Cheng, Rajasekhar Anguluri, Gautam Dasarathy*
IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2023
[paper] [poster]

[C4] **Learning the Structure of Large Networked Systems Obeying Conservation Laws**
***Anirudh Rayas**, Rajasekhar Anguluri, Gautam Dasarathy*
Advances in Neural Information Processing Systems (NeurIPS), 2022
[paper] [code] [poster]

INVITED TALKS AND LECTURES

- *Learning the Structure of Networked Systems that Obey Conservation Laws*　　February 2025
  Information Theory and Application (ITA) Workshop, San Diego

- *Learning Networks from Wide-Sense Stationary Stochastic Processes*　　December 2024
  Graduate Research Day, Arizona State University

- *Minimax Lower Bounds for Sparse Linear Regression*　　December 2024
  Guest lectures for EEE 598: Machine Learning in High Dimensions, Arizona State University

- *Gaussian Graphical Model Selection from Size-Constrained Measurements*　　September 2024
  Learning, Information, Optimization, Networks, Statistics (LIONS) seminar, Arizona State University

- *Leveraging Conservation Laws to Learn Networked Systems*　　April 2024
  Graduate Research Day, Arizona State University

- *Differential Network Analysis for Networks Obeying Conservation Laws*　　July 2023
  North American School on Information Theory (NASIT), UPenn

- *Differential Network Analysis for Networks Obeying Conservation Laws*　　June 2023
  IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), Rhode Island, Greece

- *Learning the Structure of Large Networked Systems Obeying Conservation Laws*　　December 2022
  Neural Information Processing Systems (NeurIPS), New Orleans

- *Lectures on Statistical Machine Learning*　　December 2020
  Centre for Fundamental Research and Creative Education (CFRCE), Bangalore, India

PROFESSIONAL SERVICE

Reviewer
- Neural Information Processing Systems (NeurIPS)　　2023, 2024
- Artificial Intelligence and Statistics (AISTATS)　　2023, 2024
- IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)　　2023, 2024
- Association for the Advancement of Artificial Intelligence (AAAI)　　2024
- International Conference on Learning Representations (ICLR)　　2023

- Machine Learning for Signal Processing (MLSP)   2023

Other Activities
- Co-organize LIONS seminar at Arizona State University   2021 - 2025
- Mentored Jiajun Cheng, an undergraduate SURI (SUmmer Research Initiative) intern at Arizona State University   2023

REFEREES

Gautam Dasarathy (gautamd@asu.edu)
Associate Professor,
School of Electrical, Computer and Energy Engineering (ECEE),
Arizona State University

Oliver Kosut (okosut@asu.edu)
Associate Professor,
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Arizona State University

Lalitha Sankar (lsankar@asu.edu)
Professor,
School of Electrical, Computer and Energy Engineering (ECEE),
Arizona State University

Rajasekhar Anguluri (rajangul@umbc.edu)
Asssistant Professor,
Department of Computer Science and Electrical Engineering (CSEE),
University of Maryland, Baltimore County