Aramayis Dallakyan

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Professional Summary

Statistician with 4+ years of industry experience developing production-grade statistical software and 6+ years of academic research in graphical models, causal discovery, time series analysis, and high-dimensional statistics. Co-author of forthcoming CRC Press book on statistical dependencies and 10+ peer-reviewed publications in leading ML/statistics venues.

Professional Experience

Senior Statistician & Software Developer 2021 – Present
StataCorp LLC *College Station, TX*

- Developed and maintained statistical software commands used by researchers and data scientists globally, focusing on machine learning and causal inference methods
- Collaborated with cross-functional teams (engineering, product, documentation) to ship 20+ statistical commands in Stata's production releases
- Authored technical documentation, user guides, and blog posts
- Conducted code reviews and mentored junior developers on statistical algorithm implementation

Statistical Intern Summer 2020
StataCorp LLC *College Station, TX*

- Designed and implemented the `graphiclasso` package for sparse inverse covariance estimation
- Prototyped isolation forest algorithm for anomaly detection

Education

Ph.D. in Statistics 2018 – 2021
Texas A&M University, College Station, TX Advisor: Dr. Mohsen Pourahmadi

- Dissertation: Advanced Methods for High-Dimensional Time Series and Covariance Estimation
- Emanuel Parzen Graduate Research Fellowship Award (2020)

Ph.D. Candidate in Agribusiness & Managerial Economics 2015 – 2018
Texas A&M University, College Station, TX Advisor: Dr. David Bessler

M.S. in Economics 2014
Armenian National Agrarian University Yerevan, Armenia

Technical Skills

Languages: Python, R, Stata, C++, Mata
Tools & Platforms: Git, Linux, LaTeX
Specializations: Time series, graphical models, causal discovery, high-dimensional statistics, sparse estimation

Selected Publications

- **A. Dallakyan** and N. Yang (2025) *Generalized Criterion for Identifiability of Additive Noise Models Using Majorization*, Proceedings of AISTATS, PMLR 37:45. [Code]
- **A. Dallakyan** (2024) *On Learning Time Series DAGs: A Frequency Domain Approach*, Journal of Econometrics and Statistics. Applications to causal discovery in temporal data. [Code]

- **A. Dallakyan** and M. Pourahmadi (2023) *Fused-Lasso Regularized Cholesky Factors of Large Non-stationary Covariance Matrices*, Journal of Computational and Graphical Statistics 32(1):157-170. [R Package]
- **A. Dallakyan**, R. Kim, and M. Pourahmadi (2022) *Time Series Graphical Lasso for Sparse VAR Estimation*, Computational Statistics & Data Analysis 176. Enables scalable analysis of high-dimensional time series. [R Package]
- **A. Dallakyan** (2022) *graphiclasso: Graphical Lasso for Learning Sparse Inverse Covariance Matrices*, The Stata Journal 22:625-642. [Stata Package]

Under Review: 3 papers on sparse relaxation and graphical models

Books

M. Pourahmadi and **A. Dallakyan** (forthcoming 2026). *Regressions in Covariances, Dependencies and Graphs.* CRC Press.

Selected Open-Source Software

- **SmoRe**: Python code to implement smooth relaxation of ℓ_0 regularization
- **macho**: R package for causal discovery using majorization
- **FreDom**: Python code for learning DAG from time series
- **SmoothChol**: High-dimensional Cholesky factor and covariance matrix estimation
- **tsglasso**: Time series graphical lasso
- **glasso**: Stata implementation of graphical lasso
- **iforest**: Isolation forest for anomaly detection in Stata

Professional Activities

Short Course Instructor

- **Explainable Machine Learning,** ENAR Spring Meeting (2026); Joint Statistical Meeting (2025)
- **Causal Mediation Analysis,** Joint Statistical Meeting (2024)

Conference Presentations (Selected)

AISTATS (2025) • Joint Statistical Meeting (2025, 2024, 2020) • American Causal Inference Conference (2023) • Symposium on Data Science & Statistics (2022) • Causal Data Science Meeting (2022) • Waseda International Symposium (2022) • New England Statistics Symposium (2022) • Stata Conference (2021)

Peer Review

ICML (Top Reviewer 2024) • AISTATS (Top Reviewer 2023) • IEEE • Computational Statistics & Data Analysis • Journal of Computational Economics • Stata Journal

Leadership

Session Chair at Joint Statistical Meeting (2020, 2022) • NextGen Council, Foundation for Armenian Science & Technology

Honors & Awards

Best Talk Award, SETCASA (2025) • Emanuel Parzen Graduate Research Fellowship (2020) • Award for Excellence in Research & Communication, Food Distribution Research Society (2018) • Third Place, Poster Session, SETCASA (2019) • Robert G. Cherry Fellowship (2017-2018)