Eric Yanchenko

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Education

North Carolina State University *2023*
PhD, Statistics
Advisors: Dr. Brian Reich and Dr. Srijan Sengupta

The Ohio State University *2019*
B.S. Mathematics, B.S. Physics. Statistics Minor
with Honors in the Arts and Sciences, Summa Cum Laude

Positions

Akita International University
Assistant Professor of AI & Data Science (tenure-track) *2024-Present*
Founding Member, Human & AI Center *2025-Present*

Tokyo Institute of Technology
JSPS Short-term Fellow, Dr. Petter Holme, Dr. Tsuyoshi Murata *2023*

North Carolina State University
Research Assistant, Dr. Brian Reich *2020-2023*
Research Assistant, Dr. Srijan Sengupta *2020-2023*
Duke Clinical Research Institute NHBLI Integrated Biostatistical Training Program for CVD research T32 training grant trainee, Dr. Hwanhee Hong *2021-2022*
Data-Enabled Science and Engineering of Atomic Structures Fellow *2020-2021*

The Ohio State University
Research Assistant, Department of Physics, Dr. Leonard Brillson *2015-2019*
Research Assistant, Department of Statistics, Dr. Christopher Hans *2018*

University of Michigan
Participant, Big Data Summer Institute, Dr. Jenna Wiens, Dr. Danai Koutra *2018*

Justus-Liebig University
Research Assistant, Institute of Applied Physics, Dr. Derck Schlettwein *2017*

Publications

18. **Yanchenko, E.**, Williams, J.P. and Martin, R. (2026) Hypothesis testing for community structure in temporal networks using e-values, *Network Science*, e14, 1-17. https://doi.org/10.1017/nws.2026.10036
17. **Yanchenko, E.** (2026) Oral exams in introductory statistics class with non-native English speakers, *Teaching Statistics*, **48** (2), 138-145. https://doi.org/10.1111/test.70015
16. **Yanchenko, E.** and Sengupta, S. (2026) A label-switching algorithm for fast core-periphery identification, *Network Science*, **14**, e6, 1-15. https://doi.org/10.1017/nws.2026.10023
15. **Yanchenko, E.**, Irie, K. and Sugasawa, S. (2026) The Group R2D2 Shrinkage Prior for Sparse Linear Models with Grouped Covariates, *Statistics and Computing*, **36**, 57. https://doi.org/10.1007/s11222-025-10812-6

14. **Yanchenko, E.**, Reich, B.J., Kennedy, G.G. and Huseth, A.S. (2025) Predicting *Helicoverpa zea* (Lepidoptera: Noctuidae) populations in the southern United States, *Environmental Entomology*, nvaf127. https://doi.org/10.1093/ee/nvaf127

13. **Yanchenko, E.** (2025) Statistics, in *Introducing the Liberal Arts: A Guidebook for English Learners*, Emerald Publishing. https://doi.org/10.1108/978-1-80592-303-9

12. **Yanchenko, E.** (2025) BOPIM: Bayesian Optimization for influence maximization on temporal networks, *Technometrics*, **67** (4), 669-682. https://doi.org/10.1080/00401706.2025.2505483

11. **Yanchenko, E.** (2025) Pseudo-R2D2 prior for high-dimensional ordinal regression, *Statistics and Computing*, **35**, 129. https://doi.org/10.1007/s11222-025-10667-x

10. **Yanchenko, E.** (2025) Graph sub-sampling for divide-and-conquer algorithms in large networks, *Statistics and Computing*, **35**, 87. https://doi.org/10.1007/s11222-025-10620-y

9. **Yanchenko, E.**, Bondell, H.D. and Reich, B.J. (2025) The R2D2 Prior for Generalized Linear Mixed Models, *The American Statistician*, **79** (1), 40-49. https://doi.org/10.1080/00031305.2024.2352010

8. **Yanchenko, E.**, Chappell, T.M. and Huseth, A.S. (2025) Bayesian Optimization of Insect Trap Distribution for Pest Monitoring Efficiency in Agroecosystems, *Frontiers in Insect Science*, **4**, 1509942. https://doi.org/10.3389/finsc.2024.1509942

7. **Yanchenko, E.**, Murata, T. and Holme, P. (2024) Influence maximization on temporal networks: a review, *Applied Network Science*, **9**, 16. https://doi.org/10.1007/s41109-024-00625-3

6. **Yanchenko, E.** and Sengupta, S., (2024) A generalized hypothesis test for community structure in networks, *Network Science*, **12** (2), 122-138. https://doi.org/10.1017/nws.2024.1

5. **Yanchenko, E.**, Bondell, H.D. and Reich, B.J. (2024) Spatial regression modeling via the R2D2 framework, *Environmetrics*, **35** (2), e2829. http://doi.org/10.1002/env.2829

4. **Yanchenko, E.**, Murata, T. and Holme, P. (2023) Link prediction for ex ante influence maximization on temporal networks, *Applied Network Science*, **8**, 70. https://doi.org/10.1007/s41109-023-00594-z

3. Swaminathan, A.C., Snyder, L.D., Hong, H., Stevens, S.R., Long, A.S., **Yanchenko, E.**, Qiu, Y., Liu, R., Zhang, H., Fischer, A., Burns, L., Wruck, L., and Palmer, S.M. (2023) Generalizability of External Clinical Trial and Electronic Health Record Control Arms in Idiopathic Pulmonary Fibrosis, *American Journal of Respiratory and Critical Care Medicine*, **208** (5), 579-588. https://doi.org/10.1164/rccm.202210-1947OC.

2. **Yanchenko, E.** and Sengupta, S. (2023) Core-periphery structure in networks: a statistical exposition, *Statistics Surveys*, **17**, 42-74, https://doi.org/10.1214/23-SS141

1. **Yanchenko, E.** (2022) A divide-and-conquer algorithm for core-periphery identification in large networks. *Stat.* pp. e475. https://doi.org/10.1002/sta4.475

Physics papers

2. Asel, T., **Yanchenko, E.**, Yang, X., Jiang, S., Krymowski, K., Wang, Y., Trout, A., McComb, D., Windl, W., Goldberger, J., Brillson, L., (2018) Identification of Ge Vacancies as Electronic Defects in Methyl- and Hydrogen-Terminated Germanane, *Applied Physics Letters*, **113**, 061110.

1. Jiang, S., Krymowski, K., Asel, T., Arguilla, M., Cultrara, N., **Yanchenko, E.**, Yang, X., Brillson, L., Windl W., Goldberger, J.G., (2016) Tailoring the Electronic Structure of Covalently Functionalized Germanane via the Interplay of Ligand Strain and Electronegativity, *Chemistry of Materials*, **28**, 8071-8077.

In review

5. Aguilar, J.E., Kohns, D., **Yanchenko, E..** Sugasawa, S., Irie, K., Vehtari, A and Burkner, P-C. (2026+) Proximal R2 Priors for Structured Variance Allocation, arXiv link: `https://arxiv.org/abs/2610.38879`

4. **Yanchenko, E.** (2026+) Core-periphery identification in massive networks, arXiv link: `http://arxiv.org/abs/2609.00008`

3. **Yanchenko, E.**, Williams, J.P. and Martin, R. (2026+) Universal Inference for model selection on networks, arXiv link: `https://arxiv.org/abs/2606.30981`

2. **Yanchenko, E.**, Sengupta, S. and Mukherjee, D. (2025+) Statistical inference for core-periphery structures, arXiv link: `https://arxiv.org/abs/2508.04730`

1. Feng, B.R., **Yanchenko, E.**, Hill, K.L., Rosman, L.A., Reich, B.J. and Rappold, A.G. (2024+) Mediation analysis of community context effects on heart failure using the survival R2D2 prior, *Journal of the Royal Statistical Society: Series C* (invited major revisions) arXiv link: `https://arxiv.org/abs/2411.04310`

Grants

2. OISE-DMS-JSPS Mathematical Sciences Research Collaboration Opportunity in Japan, Scalable and Generalizable Inference for Network Data *2026*

1. KAKENHI Grant-in-Aid for Research Activity Start-up, The R2D2 Shrinkage Prior for Grouped Sparse Linear Models, Principal Investigator, *Japan Society for the Promotion of Science*, ¥1,430,000 *2024-2026*

Presentations

21. Pseudo-R2D2 prior for high-dimensional ordinal regression, *Bayesian Workflow Group Meeting*, Aalto University, Helsinki, Finland (invited) *2026*

20. Hypothesis testing for community structure in temporal networks using e-values, *Data Science Workshop*, Aalto University, Helsinki, Finland (invited) *2026*

19. Statistical inference and algorithms for core-periphery structure in (large) networks, *University of Cincinnati*, Cincinnati, OH (invited) *2026*

18. Spatial regression modeling via the R2D2 framework, *Radiation Effects Research Foundation*, Hiroshima, Japan (invited) *2025*

17. Pseudo-R2D2 prior for high-dimensional ordinal regression, *Japan-US Workshop on Bayesian Inference*, Keio University, Tokyo, Japan (invited) *2025*

16. Graph sub-sampling for divide-and-conquer algorithms in large networks, *8th International Conference on Statistics and Econometrics (EcoSta 2025)*, Waseda University, Tokyo, Japan (invited) *2025*

15. Statistical inference of core-periphery structures, *Joint Statistical Meetings*, Nashville, TN *2025*

14. BOPIM: Bayesian Optimization for influence maximization on temporal networks, *CCSS Workshop on Computational Social Science: Methods and Applications, Kobe University*, Kobe, Japan (invited) *2024*
13. Graph sub-sampling for divide-and-conquer algorithms in large networks, *Economics Workshop, Keio University*, Tokyo, Japan (invited) *2024*
12. Core-periphery hypothesis testing in networks, *Faculty of Economics, The University of Tokyo*, Tokyo, Japan (invited) *2024*
11. The R2D2 prior for generalized linear mixed models, *6th International Conference on Statistics and Econometrics (EcoSta 2023)*, Waseda University, Tokyo, Japan *2023*
10. Spatial regression modeling via the R2D2 framework, *Workshop on Bayesian Statistics and Econometrics*, Temple University Japan, Tokyo, Japan (invited) *2023*
9. Comparing Bayesian methods for combining multiple historical controls in clinical trials, *Annual Meeting of the Japanese Society of Biometrics*, Sapporo, Japan *2023*
8. The R2D2 prior for generalized linear mixed models, *Faculty of Economics, The University of Tokyo*, Tokyo, Japan (invited) *2023*
7. A generalized hypothesis test for community structure in networks, *Center for Computational Social Science, Kobe University*, Kobe, Japan (invited) *2023*
6. A divide-and-conquer algorithm for core-periphery identification in large networks, *North Carolina State University*, Raleigh, NC (invited) *2022*
5. A divide-and-conquer algorithm for core-periphery identification in large networks (poster), *SRCOS Summer Research Conference*, Jekyll Island, GA *2022*
4. A generalized hypothesis test for community structure and homophily in networks, *Sunbelt 2022, INSNA*, Cairns, Australia *2022*
3. Quantifying the presence/absence of meso-scale structures in networks, *North Carolina State University*, Raleigh, NC *2022*
2. A model-agnostic hypothesis test for community structure and homophily in networks (poster), *SRCOS Summer Research Conference*, Jekyll Island, GA *2021*
1. A model-agnostic hypothesis test for community structure and homophily in networks, *Joint Statistical Meeting*, Seattle, WA *2021*

Teaching

Akita International University
MAT 200 - Statistics (6 semesters)
CCS 320 - Machine Learning and Big Data (3 semesters)
CCS 125 - Programming Principles (3 semesters)
CPS 490 - Capstone Seminar (4 students)
Independent study on Generalized Linear Models (1 student)
Independent study on Deep Learning (3 students)

North Carolina State University
Teaching Assistant, ST 758 (Advanced Statistical Computing), NCSU *2023*
Instructor for statistics first-year PhD qualifying exam boot camp *2021*

Professional service

Invited session organizer, *8th International Conference on Statistics and Econometrics (EcoSta 2025)*, Tokyo, Japan *2025*
Co-organizer, *Brave New World: Launching AIU's Third Decade: A Korea - Japan Joint Research Initiative Symposium*, Akita, Japan *2025*
Sole organizer, *2024 Bayes Workshop*, Akita, Japan *2024*

Served as a peer-reviewer for the following journals / conferences:
Bayesian Analysis
eBioMedicine
European Conference on Information Systems (ECIS) 2025 (2 reviews)
IEEE Transactions on Network Science and Engineering
Journal of Agricultural, Biological and Environmental Statistics
Journal of the American Statistical Association – Theory & Methods
Journal of Computational and Graphical Statistics (2 reviews)
Journal of Economic Entomology (2 reviews)
Journal of Statistical Software
Neotropical Entomology
Network Science
The New England Journal of Statistics in Data Science
npj Complexity
Physical Review E
Scientific Reports
Stat
Statistical Methods in Medical Research
Statistics and Computing

Awards

AScI Visiting Research Programme, *Aalto University*, 1902 € *January 19-25, 2026*
Travel Award, *ISBA World Meeting*, $300 (declined) *2022*
Clint Miller Award (best graduate student poster), *SRCOS Summer Research Conference* *2021*
NC State Datathon, 3rd Place *2021*
Paige Plagge Graduate Award for Citizenship, NCSU Statistics Department *2020*
Awarded for good citizenship to "a graduate student with an outstanding academic record, who in the judgment of the committee has especially enhanced the life of fellow students with encouragement, generosity and/or humor."

Provost Doctoral Fellowship, NCSU Graduate School, $24,000 *2019-2020*
University Graduate Fellowship, NCSU Graduate School, $4,000 *2019-2020*
Phi Beta Kappa *2019*

Consulting

Syngenta Crop Protection *2026*
Provided expert review and guidance on implementation of R2D2 priors in Bayesian regression models.

Service

Department of Statistics Seminar Committee, NCSU *2023*
NC State-Duke Summer Institute in Biostatistics Graduate Student Mentor *2022*
GRAD-Future Workshop Panelist, NCSU *2022*
Climate Committee, Department of Statistics, NCSU *2021-2022*
Started an English Conversation Club in NCSU Dept. of Stat. where four to six international students and two domestic students met weekly to encourage department camaraderie while also teaching idioms and other American-English speaking conventions to the international students *2019-2023*

Languages English: Native
Japanese: Intermediate