

FURKAN GURSOY

Postdoctoral Fellow at University of Houston (Nov 2021 - *current*)

CONTACT INFORMATION

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SUMMARY

Researcher with an interdisciplinary background in network science, machine learning, simulation, and data science at large. 4+ years industry experience. Demonstrated history of working in international and interdisciplinary research teams. Experience in academic and professional course development and instruction. Current research relates to the fairness, accountability, and transparency of AI systems.

EDUCATION

JUN 2021	PhD in Management Information Systems at BOGAZICI UNIVERSITY
AUG 2017	Concentration on network science, machine learning, and complex systems. GPA: 3.81/4.00 Visiting Researcher at IMT Atlantique, France in Fall'20. Thesis: <i>Essays in Learning Representation of Complex Networks</i> supervised by Prof. Bertan Badur.
AUG 2017	MS in Data Science (Comp. Sci. & Eng.) at ISTANBUL SEHIR UNIVERSITY
SEP 2014	Concentration on social networks and machine learning. GPA: 3.89/4.00 Exchange Student at the Czech Technical University in Prague in Spring'16. Thesis: <i>Targeted and Budgeted Influence Maximization in Social Networks under Deterministic Linear Threshold Model</i> supervised by Prof. Dilek Gunec from Ozyegin University.
JUN 2014	BS in Management Information Systems at BOGAZICI UNIVERSITY
SEP 2010	Graduated as the top scoring student in the faculty. GPA: 3.91/4.00 Graduation project: <i>Data Mining with R</i> supervised by Prof. Bertan Badur.

PUBLICATIONS

Under Review

- F. Gursoy, I. A. Kakadiaris. System Cards for AI-Based Decision-Making for Public Policy. <https://arxiv.org/abs/2203.04754>
- F. Gursoy, R. Kennedy, and I. A. Kakadiaris. A Critical Assessment of the Algorithmic Accountability Act of 2022.
- F. Gursoy, I. A. Kakadiaris. Artificial Intelligence Research Strategy of the United States: Critical Assessment and Policy Recommendations.

Revise and Resubmit

- F. Gursoy and B. Badur. Investigating internal migration with network analysis and latent space representations: An application to Turkey. *Revising for SNAM*. <https://arxiv.org/abs/2201.03543>
- F. Gursoy, M. Haddad, and C. Bothorel. Alignment and stability of embeddings: measurement and inference improvement. *Revising for Neurocomputing*. <https://arxiv.org/abs/2101.07251>

Refereed Publications

- F. Gursoy and B. Badur. (2021). Extracting the signed backbone of intrinsically dense weighted networks. *Journal of Complex Networks*, Volume 9, Issue 5, cnab019. <https://doi.org/10.1093/comnet/cnab019>
- F. Gursoy and B. Badur. (2021). An agent-based modelling approach to brain drain. *IEEE Transactions on Computational Social Systems*. (Early Access) <https://doi.org/10.1109/TCSS.2021.3066074>
- M. Altin, F. Gursoy, and L. Xu. (2021). Machine-Generated Hierarchical Structure of Human Activities to Reveal How Machines Think. *IEEE Access*, vol. 9, pp. 18307-18317. <https://doi.org/10.1109/ACCESS.2021.3053084>
- M. Ozturan, F. Gursoy, and B. Ceken. (2019). An empirical analysis on the effects of investment assessment methods on IS/IT project success. *International Journal of Information Systems and Project Management*, Vol. 7, No. 4, 33-52. <https://doi.org/10.12821/ijispm070402>
- F. Gursoy and O. Durahim. (2018). Predicting Diffusion Reach Probabilities via Representation Learning on Social Networks. 5th Int'l Management Information Systems Conference, Ankara, Turkey. <https://doi.org/10.6084/m9.figshare.7565894>

- **F. GURSOY** and B. Badur. (2018). A Community-aware Network Growth Model for Synthetic Social Network Generation. 5th Int'l Management Information Systems Conference, Ankara, Turkey. <https://doi.org/10.6084/m9.figshare.7582082>
- **F. GURSOY** and D. Gunneç. (2018). Influence maximization in social networks under Deterministic Linear Threshold Model. Knowledge-Based Systems, 161, 111-123. <https://doi.org/10.1016/j.knosys.2018.07.040>

Work in Progress / Work on Hold

- Equal confusion fairness for machine learning *with ...*
- Fairness in Facial Expression Detection *with ...*
- On operationalizing audits of ML-based automated decision systems
- On Turkish financial stock correlation networks *with ...*
- The detection of citation cartels in Web of Science over time, *with ...*
- On collaboration networks of GitHub software development communities, *with ...*
- On network formation games, *with...*
- Telecom customer churn prediction, *with ...*
- A survey on integrated information systems, *with ...*
- Discontinuance intentions toward Facebook use: value theory and network effects, *with ...*
- System dynamics modeling for sustainable higher education: a review and systems thinking perspective

TEACHING EXPERIENCE

Instructor

- MIS 125 - Introduction to Information Systems & Technology, Bogazici University, Istanbul, Turkey (Fall'21)
- DA 516 - Social Network Analysis, Sabanci University, Istanbul, Turkey (Spring'21)
- BIS 501 - Tech. Foundations of Bus. Inf. Sys., Bogazici University, Istanbul, Turkey (Spring'21)
- IE 404 - Social Network Analysis, Abdullah Gul University, Kayseri, Turkey (Fall'19)
I designed and developed the course and had it approved by the University as an elective course.

Teaching Assistant

- MIS 542 - Data Mining Concepts and Techniques, Bogazici University, Istanbul, Turkey (Fall'17, '18, '20, '21)
- MIS 331 - Data Mining, Bogazici University, Istanbul, Turkey (Fall'18)
- BIS 541 - Data Mining and Knowledge Acquisition, Bogazici University, Istanbul, Turkey (Spring'18, '19)
- MIS 336 - Business Application Development, Bogazici University, Istanbul, Turkey (Spring'18)

Other

- *Guide* at DeepLearning.ai Study Group, inzva, Istanbul, Turkey (2021)
- *Designer and Instructor* at Data Scientist Training Program, Kuveyt Turk Bank, Kocaeli, Turkey (2019)

GRANTS, SCHOLARSHIPS, AND AWARDS

2020 - 2020	French Embassy Research Fellowship (Research Grant)
2020 - 2021.	Sci. and Tech. Research Council of Turkey (TUBITAK) 2211-A Scholarship
2017 - 2021.	Council of Higher Education, Turkey (YOK) 100/2000 Scholarship
2014 - 2017	Sci. and Tech. Research Council of Turkey (TUBITAK) 2210-A Scholarship
2021	Bogazici University Doctoral Dissertation Award
2014	Bogazici University Rectorate Award
Given each year to one student who has contributed to the university community and the society with his extracurricular activities, and demonstrated outstanding academic performance.	

ACADEMIC SERVICE

- **Referee:** Information Sciences, Journal of Simulation, Online Social Networks and Media, IEEE Access, PLOS ONE, FGCS, IJISPM, EJISDC.
- **Workshop Organization Committee Member:** CCS 2020 Warm-Up, CCS 2021 Warm-Up, WWCS 2022, WWCS Steering Committee (2022 - ...).

- **Society Member:** Chair of the Advisory Board of Young Researchers of CSS (2021-2022), Network Science Society (2020 - ...), Complex Systems Society (2019 - ...), Founding Member of MyData Global (2018).
- **Grant/Award Review Committee Member:** Grants: NetSci2020 Registration Support, yrCSS Bridge Grants, yrCSS Scholarships for Events on Complex Systems. Awards: Networks 2021 Awards

WORKSHOPS AND ADVANCED SCHOOLS

- Complex Networks Winter Workshop, Jan 2021, Virtual.
Project: Financial Markets and Complex Networks
Project: Collaboration and Social Networks on Github
- Winter Workshop on Complex Systems, Jan 2020, Gruyère, Switzerland.
Project: The detection of citation cartels in Web of Science over time (1997-2017)
Project: Effect of news feed ranking on opinion coexistence in Reddit-like platforms
- Complexity72H Workshop, Jun 2019, Lucca, Italy.
Project: Community Detection in the Hyperbolic Space. <https://arxiv.org/abs/1906.09082>
- inzva AI Projects #3, Fall 2019, Istanbul, Turkey.
Project: Comb. Opt. with Reinforcement Learning. <https://github.com/inzva/combinatorial-optimization-with-RL>
- inzva AI Projects #2, Spring 2019, Istanbul, Turkey.
Project: Image Restoration/Learning to See in the Dark. <https://github.com/inzva/image-restoration>

PRESENTATIONS

Contributed Talks

- Signed backbone extraction from intrinsically dense weighted networks.
 - Conference on Complex Systems, Online, Dec 2020.
 - International Conference on Complex Networks, Online, Jun 2021.
 - Networks 2021: A Joint Sunbelt and NetSci Conference, Online, Jul 2021.
- Hyperbolic Representation Learning. Official NeurIPS 2019 Meetup in Istanbul, inzva, Istanbul, Dec 2020.
- Telecom customer churn prediction. Business Analytics Workshop, Sabanci University, Istanbul, Apr 2019. (Poster Presentation)
- Influence Maximization in Social Networks. Business Analytics Workshop, Sabanci University, Istanbul, Oct 2017. (Poster Presentation – Best Poster Award)

Invited Talks

- Dynamic Network Representation Learning and its Applications in the World Trade Network. DECIDE Seminar, IMT Atlantique, Nov 2020.
- Social Network Analysis with R. R-Ladies Istanbul, Nov 2019.
- Influence Maximization in Social Networks. Data Science Lab, Istanbul Sehir University, Nov 2015.

PROGRAMMING AND DEVELOPMENT SKILLS

PYTHON: NumPy, SciPy, pandas, statsmodels, scikit-learn, NetworkX, Keras, PyTorch, package development
 R: statistics, data mining, time series, network analysis, package development
 JAVA: fundamentals, object-oriented programming
 OTHER: MS Excel, SQL, SPSS, Amos, Weka, RapidMiner, Gephi, NetLogo, Stella, C# .NET, \LaTeX , various...

INDUSTRY EXPERIENCE

MAR 2020	Data Scientist at KUYEY TURK BANK, Kocaeli, Turkey
NOV 2018	I worked in an independent unit which served other departments in a project-based fashion using ML capabilities. My responsibilities included business understanding, solution design, feature engineering, building predictive data models, deployment, testing, and maintenance. I also led the in-house Data Scientist training program.
AUG 2017	Assist. & Assoc. Consultant at PLANIST IT SERVICES AND CONSULTING, Istanbul, Turkey
JUN 2014	I analyzed, designed, and developed data analytics tools and executive dashboards for our large corporate clients.

REFERENCES

References from collaborators, colleagues, and employers can be made available upon request.