# CEYHUN EKSIN

Industrial and Systems Engineering Department
Texas A&M University
College Station, TX 77843

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## RESEARCH INTERESTS

Game theoretic modeling and optimization of networked multi-agent systems. Topics of interest include evolutionary game theory, autonomous systems, and public health.

**Areas of expertise:** Game theory, optimization, nonlinear systems, networks, energy systems, and epidemics.

## EXPERIENCE

**Texas A&M University**                                          College Station, TX

Corrie and Jim Furber '64 Assistant Professor                             July 2018–

*Affiliation:* Wm. Michael Barnes Industrial and Systems Engineering Department

*Courtesy appointment:* Electrical and Computer Engineering Department

**Max Planck Institute for Dynamics and Self-organization**      Göttingen, Germany

Associate visiting researcher                              January 2018–June 2018

**Georgia Institute of Technology**                                      Atlanta, GA

Postdoctoral Researcher                                 April 2015–August 2017

*Affiliations:* School of Electrical & Computer Engineering, and Biological Sciences

Supervisors: Prof. J.S. Weitz and Jeff S. Shamma

*Projects:* Control and modeling of coevolving networks. Social epidemic models.

## EDUCATION

**University of Pennsylvania**                                        Philadelphia, PA

Ph.D. in Electrical & Systems Engineering                                  May 2015

*Thesis*: "Bayesian Network Games"

*Advisor*: Prof. Alejandro Ribeiro

**Wharton School of the University of Pennsylvania**                  Philadelphia, PA

M.A. in Statistics                                                          May 2015

**Boğaziçi University**                                              Istanbul, Turkey

M.S. in Industrial Engineering                                     December 2008

*Thesis*: "Applying Genetic Algorithms to Policy Design in System Dynamics"

**Istanbul Technical University**                                    Istanbul, Turkey

B.S. in Control Engineering                                               June 2005

*Thesis*: "Fuzzy Logic Approach to Mimic Decision Making Behavior of Humans in Stock Management Game"

## ACADEMIC HONORS

- Texas A&M Institute of Data Science (TAMIDS) Career Initiation Fellow, 2023 ($10,000)
- Corrie and Jim Furber '64 Faculty Fellowship, 2023-2025
- NSF CAREER 2023, Energy, Power, Control and Networks, 2023-2028

- Serve-Learn-Sustain Smart Cities & Connected Communities Fellow, Georgia Tech, 2017 ($1,000).
- Finalist at the 2nd Annual Georgia Tech Postdoctoral Research Symposium, 2015.
- Erasmus Exchange Student at TU/Eindhoven, the Netherlands (Feb. - July 2007)

PUBLICATIONS

**Book chapters**

1. **C. Eksin**, B. Swenson, S. Kar, and A. Ribeiro, "Game Theoretic Learning", In Cooperative Graph Signal Processing, pp. 209-235, Ch. 7, 2018

**In review journals**

1. A. Deka, **C. Eksin**, M. L. Ndeffo-Mbah, "Analyzing the use of non-pharmaceutical personal protective measures through self-interest and social optimum for the control of an emerging disease", (submitted), 2023.

2. S. Das and **C. Eksin**, "Average submodularity of maximizing anticoordination in network games", (R&R), SIAM Journal on Control and Optimization, 2022.

3. H. Khazaei, **C. Eksin**, R. Khatami, A. Garcia, "Flexible Coupling of Electricity Markets," (R&R), European Journal of Operations Research, 2022.

**Journal publications**

1. A. Karthikeyan, S. Das, S. Bukkapatnam, and **C. Eksin**, "Mathematical Model of Surface Morphology Evolution during Polishing in Additive Manufacturing", (accepted), IISE Transactions, 2023.

2. F. Sezer and **C. Eksin**. "Robust Social Welfare Maximization via Information Design in Linear-Quadratic-Gaussian Games," IEEE Control Systems Letters, 7, 3096-3101, 2023.

3. S. Aydin and **C. Eksin**, "A Best-Response Algorithm with Voluntary Communication and Mobility Protocols for Mobile Autonomous Teams Solving the Target Assignment Problem," IEEE Control Systems Technology, 31(6), 2835-2847, 2023.

4. F. Sezer, H. Khazaei, **C. Eksin**, "Maximizing Social Welfare and Agreement Via Information Design in Linear-Quadratic-Gaussian Games," (accepted), IEEE Trans. Automatic Control, 2023.

5. F. Sezer and **C. Eksin**, "Information Design Preferences of Agents in Linear-Quadratic-Gaussian Games," *IEEE Control Systems Letters*, 6, 3235-3240, 2022.

6. S. Aydin and **C. Eksin** , "Decentralized Inertial Best-Response with Voluntary and Limited Communication in Random Communication Networks," *Automatica*, 145, 2022.

7. L. Hong, A. Garcia, and **C. Eksin**, "Distributed networked learning with correlated data," *Automatica*, 137, 2022.

8. A. Garcia, R. Khatami, **C. Eksin**, F. Sezer, "An Incentive Compatible Mechanism for Market Coupling," *IEEE Trans. Power Systems*, 37(2), 1241-1252, 2022.

9. S. Aydin, S. Arefizadeh, **C. Eksin**, "Decentralized fictitious play in near-potential games with time-varying communication networks," *IEEE Control Systems Letters*, 6, 2021.

10. **C. Eksin**, M. Ndeffo-Mbah, and J.S. Weitz, "Reacting to outbreaks in neighboring localities", *Journal of Theoretical Biology*, 520, 2021.

11. A. Nourmohammad, and **C. Eksin**, "Optimal evolutionary control for artificial selection on molecular phenotypes", *Physical Review X*, 11(1), 2021.

12. J.S. Weitz, S.W. Park, **C. Eksin**, and J. Dushoff, "Awareness-driven behavior changes can shift the shape of epidemics away from peaks and towards plateaus, shoulders, and oscillations", *The Proceedings of the National Academy of Sciences of the USA (PNAS)*, 117(51), pp. 32764-32771, 2020.

13. **C. Eksin**, and K. Paarporn, "Control of learning in anti-coordination network games", *IEEE Trans. Control of Network Systems*, 7(4), pp. 1823-1835, 2020.

14. **C. Eksin**, K. Paarporn, and J. S. Weitz, "Systematic biases in disease forecasting - the role of behavior change", *Epidemics*, vol. 27, pp. 96-105, 2019.

15. B. Swenson, **C. Eksin**, S. Kar, and A. Ribeiro, "Distributed Inertial Best-Response Dynamics", *IEEE Trans. Autom. Control*, vol. 63, no. 12, 2018.

16. K. Paarporn, **C. Eksin**, and J. S. Weitz, "Information sharing for a coordination game in fluctuating environments". *Journal of Theoretical Biology*, vol. 454, 2018.

17. **C. Eksin** and A. Ribeiro, "Distributed fictitious play for multiagent systems in uncertain environments", *IEEE Trans. Autom. Control*, vol. 63, no. 4, 2018.

18. **C. Eksin**, H. Deliç and A. Ribeiro, "Demand response with communicating rational consumers", *IEEE Trans. Smart Grid*, vol. 9, no. 1, 2018.

19. K. Paarporn, **C. Eksin**, J. S. Weitz, and J. S. Shamma, "Networked SIS epidemics with awareness", *IEEE Trans. Computational Social Systems*, vol. 4, no. 3, 2017

20. **C. Eksin**, J.S. Shamma, J.S. Weitz, "Disease dynamics on a network game: a little empathy goes a long way", *Scientific Reports*, 7:44122, March 2017.

21. J.S. Weitz, **C. Eksin**, K. Paarporn, S.P. Brown, and W.C. Ratcliff, "An oscillating tragedy of the commons in replicator dynamics with game-environment feedback", *Proceedings of the National Academy of Sciences USA*, vol. 113, no. 47, 2016.

22. P. Molavi, **C. Eksin**, A. Ribeiro and A. Jadbabaie, "Learning to coordinate in social networks", *Operations Research*, vol. 64, no. 3, 2016.

23. **C. Eksin**, H. Deliç and A. Ribeiro, "Demand response management in smart grids with heterogeneous consumer preferences", *IEEE Trans. Smart Grid*, vol. 6, no. 6, pp. 3082 - 3094, 2015.

24. **C. Eksin**, P. Molavi, A. Ribeiro and A. Jadbabaie, "Bayesian quadratic network game filters", *IEEE Trans. Signal Process.*, vol. 62, no. 9, pp. 2250-2264, 2014.

25. **C. Eksin**, P. Molavi, A. Ribeiro and A. Jadbabaie, "Learning in networks with incomplete information: asymptotic analysis and tractable implementation of rational behavior", *IEEE Signal Process. Mag.*, vol. 30, no. 3, pp. 30-42, 2013.

26. **C. Eksin** and A. Ribeiro, "Distributed network optimization with heuristic rational agents", *IEEE Trans. Signal Process.*, vol. 60, no. 10, pp. 5396-5411, 2012.

**Peer-reviewed conference publications**

1. S. Aydin and **C. Eksin**, "Policy Gradient Play with Networked Agents in Markov Potential Games", *The Learning for Dynamics and Control (L4DC)*, 2023.

2. K. Paarporn and **C. Eksin** , "SIS epidemics coupled with evolutionary social distancing dynamics", *IEEE American Control Conference (ACC)*, 2023.

3. S. Aydin and **C. Eksin** , "Networked policy gradient in Markov potential games", *International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, 2023.

4. S. Aydin and **C. Eksin** , "Convergence Bounds of Decentralized Fictitious Play Around a Single Nash Equilibrium in Near-Potential Games", *IEEE 61st Conf. on Decision and Control (CDC)*, 2519-2524, 2022.

5. S. Das and **C. Eksin** , "Approximate Submodularity of Maximizing Anticoordination in Network Games", *IEEE Conf. on Decision and Control (CDC)*, 3151-3157, 2022.

6. H. Khazaei, K. Paarporn, A. Garcia, **C. Eksin**, "Disease Spread Coupled with Evolutionary Social Distancing Dynamics Can Lead to Growing Oscillations," *IEEE Conf. on Decision and Control (CDC)*, 4280-4286, 2021.

7. S. Aydin, S. Arefizadeh, **C. Eksin**, "Decentralized Fictitious Play Converges Near a Nash Equilibrium in Near-Potential Games," *Asilomar Conf. on Signals, Systems and Computers*, 998-1002, 2021.

8. S. Aydin and **C. Eksin** , "Decentralized Fictitious Play with Voluntary Communication in Random Communication Networks", *IEEE Conf. on Decision and Control (CDC)*, pp. 337-342, 2020.

9. L. Hong, A. Garcia, and **C. Eksin**, "Distributed Networked Learning with Correlated Data", *IEEE Conf. on Decision and Control (CDC)*, pp. 5923-5928, 2020.

10. S. Aydin and **C. Eksin**, Learning-aware Decentralized Communication and Mobility Control for the Target Assignment Problem, *IEEE Conf. on Control Technology and Applications (CCTA)*, pp. 334-339, 2020.

11. **C. Eksin**, Control of stochastic disease network games via influential individuals, *IEEE Conf. on Decision and Control (CDC)*, pp. 6893-6898, 2019.

12. S. Arefizadeh and **C. Eksin**, Distributed fictitious play in potential games with time-varying communication networks, *Asilomar Conf. Signals, Systems & Comp.*, pp. 1755-1759, 2019.

13. K. Paarporn, **C. Eksin**, J. S. Weitz, and Y. Wardi, Optimal control policies for evolutionary dynamics with environmental feedback, *in IEEE Conf. on Decision and Control*, pp. 1905-1910, Miami FL, Dec. 17-19 2018.

14. K. Paarporn and **C. Eksin**, Incentive Control in network anti-coordination games with binary types, *Asilomar Conf. Signals, Systems & Comp.*, pp. 316-320, 2018.

15. **C. Eksin** and A. Ribeiro (2016). Distributed fictitious play for multi-agent systems with uncertainty. In 2016 IEEE Global Conf. Signal and Information Processing (GlobalSIP) (pp. 495–499).

16. K. Paarporn, **C. Eksin**, J. S. Weitz, and J. S. Shamma, The effect of awareness on networked SIS epidemics, *in IEEE Conf. on Decision and Control*, pp. 973-978, Las Vegas NV, Dec. 10-13 2016.

17. **C. Eksin**, B. Swenson, S. Kar and A. Ribeiro, Learning pure-strategy Nash equilibria in networked multi-agent systems with uncertainty, *in IEEE Conf. on Decision and Control*, pp. 5292-5297, Las Vegas NV, Dec. 10-13 2016.

18. **C. Eksin** and A. Ribeiro, Distributed fictitious play in potential games of incomplete information, *in IEEE Conf. on Decision Control*, pp. 5190-5196, Osaka Japan, Dec. 15-18 2015.

19. K. Paarporn, **C. Eksin**, J. S. Weitz, and J. S. Shamma, Epidemic spread over

networks with agent awareness and social distancing, *in 53rd Annual Allerton Conference on Communication, Control, and Computing*, pp. 51-57, Monticello IL, Sept. 29 - Oct. 2 2015.

20. **C. Eksin**, A. Hooshmand and R. Sharma, A decentralized energy management system, *in Proc. European Control Conference (ECC)*, pp. 2260-2267, Linz Austria, July 15-17 2015.

21. **C. Eksin**, H. Deliç and A. Ribeiro, Smart pricing in demand response management with heterogeneous consumer preferences, *in Proc. American Control Conference (ACC)*, pp. 5692 - 5699, Chicago IL, July 1-3 2015.

22. **C. Eksin**, H. Deliç and A. Ribeiro, Rational consumer behavior models in smart pricing, *Int. Conf. Acoustics Speech Signal Process. (ICASSP)*, pp. 3167-3171, Brisbane Australia, April 19-24 2015.

23. **C. Eksin**, H. Deliç and A. Ribeiro, "Distributed demand side management for heterogeneous rational consumers in smart grids with renewable sources," *Int. Conf. Acoustics Speech Signal Process. (ICASSP)*, pp. 1100-1104, Firenze Italy, May 4-9 2014.

24. **C. Eksin**, P. Molavi, A. Ribeiro and A. Jadbabaie, "Information aggregation in a beauty contest game," *Int. Conf. Acoustics Speech Signal Process. (ICASSP)*, pp. 4783-4787, Firenze Italy, May 4-9 2014.

25. P. Molavi, **C. Eksin**, A. Ribeiro and A. Jadbabaie, "Learning to coordinate in a beauty contest game," *in Proc. Conf. on Decision and Control*, pp. 7358-7363, Firenze Italy, Dec. 10-13 2013.

26. **C. Eksin**, P. Molavi, A. Ribeiro and A. Jadbabaie, "Distributed filters for Bayesian network games," in *European Signal Process. Conf.*, (invited), Marrakech Morocco, Sept. 9-13, 2013.

27. **C. Eksin**, P. Molavi, A. Ribeiro and A. Jadbabaie, "Bayesian quadratic network game filters," in *Proc. Int. Conf. Acoustics Speech Signal Process. (ICASSP)*, pp. 4589-4593, Vancouver Canada, March 26-31 2013.

28. **C. Eksin**, P. Molavi, A. Ribeiro and A. Jadbabaie, "Dynamic games with side information in economic networks," in *Proc. Asilomar Conf. on Signals, Systems and Computers*, pp. 520-524, Pacific Grove CA, Nov. 4-7 2012.

29. **C. Eksin**, P. Molavi, A. Ribeiro and A. Jadbabaie, "Learning in Linear Games over Networks," in *Proc. Allerton Conference on Communication, Control and Computing*, pp. 434-440, Monticello IL, Oct. 1-5 2012.

30. **C. Eksin** and A. Ribeiro, "Heuristic rational models in social networks," in *Proc. Int. Conf. Acoustics Speech Signal Process. (ICASSP)*, pp. 3077-3080, Kyoto Japan, March 25-30 2012.

31. B. D. Nye, G. K. Bharathy, B. G. Silverman, and **C. Eksin**. "Simulation-based training of ill-defined social domains: the complex environment assessment and tutoring system (CEATS)," in *Int. Conf. Intelligent Tutoring Systems*, pp. 642-644. Springer Berlin Heidelberg, 2012.

32. **C. Eksin** and A. Ribeiro, "Network optimization with heuristic rational agents," in *Proc. Asilomar Conf. on Signals, Systems and Computers*, pp. 53-57, Pacific Grove CA, Nov. 6-9 2011.

33. **C. Eksin**, B. G. Silverman, D. Pietrocola and R. Kang. "Dimensions of leader-in-context models," in *Proc. Int. Conf. Cognitive Modeling*, pp. 61-66, Philadelphia PA,

Aug. 5-8 2010.

34. **C. Eksin**, M. Guzelkaya, E. Yesil, and I. Eksin, "Fuzzy logic approach to mimic decision making behavior of humans in stock management game," in Proc. *Int. Conf. of the System Dynamics Society*, Athens Greece, July 20-24, 2008

35. **C. Eksin** and A.O. Konuray, "Business dynamics of a record company as influenced by online channels," in Proc. *Int. Conf. of the System Dynamics Society*, Athens Greece, July 20-24, 2008.

36. **C. Eksin** and Y. Barlas, "Genetic algorithms for multi-objective optimization in dynamic systems," in *Proc. Int. Conf. of the System Dynamics Society*, Athens Greece, July 20-24, 2008.

### Reports

1. C. Stefan, S. Dommers, **C. Eksin**, R. Sitters, A. Stougie, and L. Stougie. "A PTAS for the multiple depot vehicle routing problem," *SPOR Report*, No. 2008-03, TU/Eindhoven, Netherlands, 2008.

## PATENT

A. Hooshmand, R. Sharma, and **C. Eksin**, "Decentralized Energy Management Platform", US20150295410, App. No. US 14/681, 2019.

## GRANTS

**NSF CAREER- Energy, Power, Control and Networks (EPCN)**          9/2023–9/2028

"CAREER: Evolutionary Games in Dynamic and Networked Environments for Modeling and Controlling Large-Scale Multi-agent Systems", Role: **PI**, **$503,462**

**European Commission- Horizon Europe (HORIZON)**          1/2023–1/2026

"Manufacturing Architecture for Resilience and Sustainability (MARS)", PI: Mohamed El Mansori (ENSAM, France), *submission via ENSAM*. Role: **co-PI**, Other TAMU CoPIs: N. Reddy and S. Bukkapatnam. *Total: 5,142,377 Euro. Portion allocated for ENSAM affiliated co-PIs, student/postdocs: 481,188 Euro. Note: This is a European grant. The funds are not transferable to TAMU. The students and postdocs hired need to be affiliated with ENSAM, France or another European institution.*

**NSF- Computing and Communication Foundations (CCF)**          10/2020–9/2024

"Communication-Aware Decentralized Game-Theoretic Learning Algorithms for Networked Systems with Uncertainty", Role: **PI**, **$361,086**

**NSF- Energy, Power, Control and Networks (EPCN)**          9/2020–8/2024

"Modeling and Control of Ceovolutionary Network Formation with Applications to Finishing Processes for 3D Printed Components", Role: **PI**, CoPI: Satish Bukkapatnam, **$430,000**

**T3 Texas A&M**          1/2020-1/2022

"Understanding individual behavior and value of social network information during the flu season", Role: **PI**, CoPIs: Martial Ndeffo Mbah, Alexander Brown, **$30,000**

**Innovation [X]** School of Innovation and Office of Diversity, Texas A&M          2020-2021

"Effective Communication Strategies During Covid-19", Role: **Co-PI**, PI: C. Lakimsetti, Co-PIs: E. Amaral, E. Santana, D. Over, M. Perez-Patron, **$20,000**

## INTERNSHIP

**NEC Laboratories America Inc.**                                                      Cupertino, CA

Energy Department Research Intern                                      May 2014 - August 2014

*Projects:* Decentralized energy management systems with storage and renewables.

ADVISEES

- *Hossein Khazaei*, Postdoctoral Researcher (co-advised with Alfredo Garcia), Texas A&M, TX, Fall 2020–Summer 2021
- *Roohallah Khatami*, Postdoctoral Researcher (co-advised with Alfredo Garcia), Texas A&M, TX, Fall 2019–Spring 2020. *currently Assistant Professor in Southern Illinois University*

  **PhD Students:**
- *Khaled J. Nakhleh*, PhD Candidate, Texas A&M, Fall 2023–present (co-advised with Sabit Ekin)
- *Abhishek Jaiswal*, PhD Candidate, Texas A&M, Fall 2023–present
- *Ahmet E. Arcaklioglu*, PhD Candidate, Texas A&M, Fall 2023–present
- *Soham Das*, PhD Candidate, Texas A&M, Fall 2020–present

  **Former PhD Students:**
- *Sarper Aydın*, PhD, Texas A&M, Fall 2019–Summer 2023
- *Furkan Sezer*, PhD, Texas A&M, Fall 2019–Spring 2023

  **Graduate Students:**
- Aditya Y. Pandit, ISEN Masters Texas A&M, Fall 2022–present
- Francisco Donoso, ISEN Masters Texas A&M, Spring 2021–Summer 2022
- Soham Das, ISEN Masters Texas A&M, Spring 2020–Summer 2020

  **Undergraduate:**
- Spencer Nguyen, NSF IRES Project joint with Project Arts et Metier in France, ISEN Texas A&M, Summer 2023-present
- Reagan Partin, NSF IRES Project joint with Project Arts et Metier in France, ETID Texas A&M, Summer 2022
- Sagar Ganeshan, Undergraduate Studies, ISEN Texas A&M, Spring 2022
- Daniel Guerson, Louis Stokes Alliance for Minority Program (LSAMP) Fellow, ECE Texas A&M, Spring 2020–Fall 2021
- Francisco Donoso, ISEN Texas A&M, Spring 2020-Fall 2021
- *Capstone:* Corbin Smajstrla, Paige Potts, Ridge Jisha, Keaton Malone, Spring 2023
- *Capstone:* Kunaal Bantwal, Cabe Parham, Colton Nelson, Hannah Maurer, Spring 2023
- *Capstone:* Luke Shafik, Shayne Jayawardene, Preston Crow, Byron Barthelemy, Spring 2019
- *Capstone:* Ian McNelis, Hudson Surjana, Natasha Surjana, Alberto Maldonado, Alexa Gutierrez - **(Best Project)**, Fall 2018

  *During Postdoc at Georgia Tech:*
- Adam B. Zhang & Brighton Ancelin, Bachelors, Georgia Tech, GA, Spring 2017, *Supervised project:* A network data repository for epidemics models–**Best presentation in the Undergraduate Symposium at Georgia Tech**
- Keith Paarporn, ECE, Ph.D. candidate, Georgia Tech, Fall 2016-Spring 2017, *Supervised project:* Global coordination games
- Walker Gussler, Biology, Masters, Georgia Tech, GA, Fall 2016, *Supervised project:* Pitfalls in disease forecasting: effects of behavior and networks
- Adam B. Zhang, Applied Mathematics, Bachelors, Georgia Tech, GA, Fall 2016, *Supervised project:* Networked SIS epidemics with awareness - empirical networks

- Keith Paarporn, ECE, Masters, Georgia Tech, GA, Fall 2015 - Spring 2016,
  *Supervised project:* Networked SIS epidemics with awareness

TEACHING EXPERIENCE

**Instructor** for "ISEN 613 - Engineering data analysis" , Texas A&M        Spring 2023

Enrollment: 77 students

**Instructor** for "ISEN 613 - Engineering data analysis" (Distance Learning Section),
Texas A&M                                                                    Spring 2023

Enrollment: 5 students

**Instructor** for "ISEN 413 - Advanced data analytics" , Texas A&M        Fall 2022

Enrollment: 22 students

**Instructor** for "ISEN 613 - Engineering data analysis" , Texas A&M        Spring 2022

Enrollment: 75 students

**Instructor** for "ISEN 613 - Engineering data analysis" (Distance Learning Section),
Texas A&M                                                                    Spring 2022

Enrollment: 25 students

**Instructor** for "ISEN 320 - Operations Research I", Texas A&M        Fall 2021

2 Sections, Enrollment total: 152 students

**Instructor** for "ISEN 613 - Engineering data analysis" , Texas A&M        Fall 2020

Enrollment: 40 students

**Co-Instructor** for "ISEN 689 - Sp. Tp: Learning and Optimization over Networks",
Texas A&M                                                                    Spring 2020

Enrollment: 26 students

**Instructor** for "ISEN 613 - Engineering data analysis" (Distance Learning Section),
Texas A&M                                                                    Spring 2020

Enrollment: 6 students

**Instructor** for "ISEN 613 - Engineering data analysis", Texas A&M        Fall 2019

Enrollment: 58 students

**Instructor** for "ISEN 613 - Engineering data analysis" (Distance Learning Section),
Texas A&M                                                                    Fall 2019

Enrollment: 8 students

**Instructor** for "ISEN 320 - Operations Research I", Texas A&M        Spring 2019

Enrollment: 66 students

**Instructor** for "ISEN 613 - Engineering data analysis", Texas A&M        Fall 2018

Enrollment: 58 students

**Teaching assistant** for "Systems Methodology", Univ. of Pennsylvania        Spring 2011
**Teaching assistant** for "Agent Based Modeling", Univ. of Pennsylvania        Fall 2010
**Teaching assistant** for "Agent Based Modeling", Univ. of Pennsylvania        Fall 2009

INVITED PRESENTATIONS

- *Networked Strategic Learning for Autonomous Systems*
  Center for Control Science and Technology Seminar Series, UT Dallas, TX (scheduled April 21, 2023)

- *Networked Strategic Learning for Autonomous Systems*
  Electrical, Computer, and Systems Engineering Seminar Series, Rensselaer Polytechnic Institute, NY (March 2, 2023)

- *Networked Strategic Learning for Autonomous Systems*
  Industrial Engineering Department Seminar, University of Houston, TX (February 2023)

- *Networked Strategic Learning for Autonomous Systems*
  Industrial Engineering Department Seminar, Bogazici University, Istanbul,Turkey (December 2022)

- *Networked Strategic Learning for Autonomous Systems*
  Industrial Engineering Department Seminar, Bilkent University University, Istanbul,Turkey (December 2022)

- *Communication-Aware and Decentralized Strategic Learning in Networked Multiagent Systems*
  Ins. Data Science, Texas A&M University (Fall 2021)

- *Communication-Aware Decentralized Game-Theoretic Learning Algorithms for Networked Systems with Uncertainty*
  Department of Electrical and Computer Engineering Engineering, University of Central Florida (Spring 2021)

- *Communication-Aware Decentralized Game-Theoretic Learning Algorithms for Networked Systems with Uncertainty*
  Department of Industrial Engineering, University of Pittsburgh (Spring 2021)

- *Optimal Control for Evolutionary Dynamics*
  Bio-Group Seminar, Texas A&M ECE (2020)

- *Learning and Influence in Networked Multiagent Systems with Uncertainty*
  Universidad Rey Juan Carlos ECE, Madrid, Spain (2019)

- *Learning networked multiagent systems with uncertainty*
  Texas A&M ECE (2018)

- *Disease Dynamics on a Network Game: a Little Empathy Goes a Long Way*
  Institute for Systems Theory and Automatic Control, University of Stuttgart (2018)

- *Decision making in networked multiagent systems with uncertainty*
  Faculty of Math and Sciences - Groningen University (January 2017), Industrial and Systems Engineering - University of Florida (March 2017), Electrical Engineering - University of Hawaii (April 2017), Industrial and Systems Engineering - Texas A&M (May 2017)

- *Networked multiagent systems with uncertainty*
  Sabancı University (April 2016), Boğaziçi University (May 2016).

- *Disease dynamics on a network game*
  UPenn (April 2016), Yale Inst. Network Science (2017), University of Stuttgart (2018)

- *Multiagent systems with uncertainty: Infectious disease dynamics over networks*
  Bilkent University (Dec. 2015), Boğaziçi University (Jan. 2016).

- *Bayesian network games approach to demand response management in smart grids*
  Power and Energy Systems Group at UIUC, (May 2014).

- *Bayesian network games*
  Sabancı University (Dec. 2013), Koç University (Dec. 2013), Boğaziçi University (Dec. 2013), Princeton (April 2014).

- *Network optimization with heuristic rational agents*
  Penn Seminar on Communications and Networking, UPenn (Oct. 2011).

## PROFESSIONAL AFFILIATIONS and ACTIVITIES

- IEEE Member, IEEE Control Systems Society Member, IEEE Signal Processing Society Member, INFORMS, IISE.

- Publicity Chair for 5th IFAC Conference on Cyber-Physical Human Systems, 2024.

- **Editor:** PLOS ONE - Complex Networks Channel

- **Reviewer for Journals:** IEEE Trans. Automatic Control, Automatica, IEEE Trans. Control of Network Systems, Control Systems Letters, SIAM Journal of Optimization, SIAM Journal on Control and Optimization, IEEE Trans. Smart Grids, Journal of Theoretical Biology, IEEE Trans. Signal and Information Process. over Networks, European Journal of Operations Research, Optimization Letters, INFORMS Journal on Computing , IEEE Trans. Signal Process., Signal Process. Letters, IEEE Journal Sel. Topics in Signal Process., IEEE Trans. Network Science and Engineering (2), Nature Communications, Scientific Reports, Journal of Optimization Theory and Applications.

- **Reviewer for Conferences:** Int. Conf. Acoustics, Speech, Signal Process., IEEE Conf. Decision and Control, IEEE Global Conf. on Signal and Inf. Process., IEEE Conf. on Decision and Control (CDC), American Control Conf. (ACC), GAMENETS, Asilomar Conf. on Signals, Systems, and Computers.

- **Invited session organizer:**
  'Multiagent Systems and Game Theory' at the Asilomar Conference on Signals, Systems, and Computers, 2016
  'Network Games' at the Asilomar Conference on Signals, Systems, and Computers, 2018
  'Game Theoretic Learning over Networks' at the Asilomar Conference on Signals, Systems, and Computers, 2019
  'Game Theoretic Learning in Networks' at the INFORMS Annual Meeting – Optimization track, 2020.
  Co-organizer (w/Alfredo Garcia) of two invited sessions titled 'Reinforcement learning for multiagent systems' and 'Distributed Nash equilibrium seeking ' at the '7th International Conference on Continuous Optimization (ICCOPT)' – *Variational Inequalities, Complementarity Problems, Games, and Equilibria* cluster, 2022

- **Workshops:** - Invited presenter at *AM2 Synergetic Research Initiation Workshop* held jointly by TAMU and ENSAM in France, Fall 2021.
  - Invited presenter at Online Workshop of Design & Analytics for Urban Artificial Intelligence @ Texas A&M, Summer 2022

- **Reviewer** for the INFORMS best paper award in the *Data Analytics & Mining cluster*, 2022.

- **Reviewer and Judge** for the Texas Engineering and Science Fair, *Robotics track*, Junior and Senior high school students, 2022.