

# Alex Olshevsky

## Curriculum Vitae

Department of Electrical and  
Computer Engineering  
Boston University  
8 St. Mary's St.  
Boston, MA, 02215  
✉ alexols@bu.edu

### RESEARCH INTERESTS

Learning, optimization, and control, especially in distributed and multi-agent systems.

### ACADEMIC POSITIONS

- May 2019 — Associate Professor, Boston University, Department of Electrical and Computer Engineering.
- Sep 2016 — Assistant Professor, Boston University, Department of Electrical and Computer Engineering.  
May 2019
- Jan 2012 — Assistant Professor, University of Illinois at Urbana-Champaign, Department of Industrial and Enterprise Systems Engineering.  
Aug 2016
- Sep 2010 — Postdoctoral Scholar, Princeton University, Department of Mechanical and Aerospace Engineering.  
Jan 2012
- June 2005 - Research Associate, Los Alamos National Laboratory, Computer, Computational, and Statistical Sciences division.  
Aug 2008

### EDUCATION

- 2010 **PhD in Electrical Engineering and Computer Science**, *Massachusetts Institute of Technology*, Cambridge, MA
- 2006 **MS in Electrical Engineering and Computer Science**, *Massachusetts Institute of Technology*, Cambridge, MA
- 2004 **BS in Electrical and Computer Engineering**, *Georgia Institute of Technology*, Atlanta, GA  
Graduated with Highest Honors.
- 2004 **BS in Applied Mathematics**, *Georgia Institute of Technology*, Atlanta, GA  
Graduated with Highest Honors.

### CURRENT FUNDED PROJECTS

- 2019-2022 “Effectively Decentralizing Optimization Over Large-Scale Networks,” NSF Energy, Power, Control and Networks Division, \$300,000, Single PI.
- 2019-2022 “Distributed Analytics for Enhancing Fertility in Families,” NSF Smart and Connected Health, \$1,199,750. Co-PI along with Lauren Wise, Shruthi Mahalingaiah. PI: Yannis Paschalidis.
- 2018-2021 “Effective Control of Leader-Follower Networks,” \$360,000, ARO Information Structure, Causality, and Dynamics for Control Program, Single PI.

### PAST FUNDED PROJECTS

- 2014-2020 “CAREER: Algorithms and Fundamental Limitations for Sparse Control,” NSF Energy, Power, Control and Networks Division, \$400,000, Single PI.
- 2016-2020 “Adaptive Decentralized Resource Optimization,” \$673,102, ONR Computational Methods in Decision Making Program, Co-PI along with Rakesh Nagi. PI: Angelia Nedich.
- 2015-2019 “Reliable Multi-Agent Control in Failure-Prone Environments via Inhomogeneous Markov Chains,” AFOSR Young Investigator Program, \$360,000, Single PI.
- 2015-2019 “Achieving Consensus Among Autonomous Dynamic Agents using Control Laws that Maintain Performance as Network Size Increases,” \$300,914, NSF Dynamics, Control, and System Diagnostics Division, Single PI.
- 2016-2019 “Design of Network Dynamics for Competitive-Strategic Team Games with Minimum Regret,” \$500,000, NSF Cyber-Physical Systems Division, co-PI along with Angelia Nedich and Carolyn Beck.

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## RESEARCH GROUP

- Rui Liu, SE graduate student.
- Qianqian Ma, ECE graduate student.
- Haoxing Tian, ECE graduate student.
- Andrew Huss, ECE graduate student.

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## ALUMNI

- Artin Spiridonoff, Ph.D. 2021, currently at Snap Inc.
- Shi Pu, postdoctoral scholar 2018-2019, currently Assistant Professor at Chinese University of Hong Kong, Shenzhen.
- Cesar Uribe, Ph.D. 2018, currently an Assistant Professor at Rice University.
- Wei (Wilbur) Shi, postdoctoral scholar 2015-2017.

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## AWARDS AND HONORS

- 2019 Best Paper, International Medical Informatics Association, Section on Clinical Research Informatics.
- 2015 Program Chair, NecSys '15 (the 5<sup>th</sup> IFAC Workshop on Distributed Estimation and Control in Networked Systems).
- 2015 AFOSR Young Investigator.
- 2014 NSF CAREER Award.
- 2012 ICS Prize from INFORMS for the best English-language paper dealing with Operations Research/Computer Science.
- 2011 SIAM paper award for a publication in the *SIAM Journal on Control and Optimization* chosen to be reprinted in the *SIAM Review*.
- Fall 2013 List of teachers ranked as excellent by their students, for teaching *GE 320, Introductory Control Systems*, a junior-level course in the General Engineering major.
- Spring 2014 List of teachers ranked as excellent by their students, for teaching *Analysis of Nonlinear Systems, ECE 528/ME 546/GE 520*, a first-year graduate level course cross-listed between several departments.
- 2015 UIUC Engineering Council Outstanding Advising Award.

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## JOURNAL PUBLICATIONS AND ML CONFERENCES

52. “Asymptotic Network Independence and Step-Size for a Distributed Subgradient Method,” A. Olshevsky, [Journal of Machine Learning Research](#), to appear.
51. “Non-asymptotic Concentration Rates in Cooperative Learning Part II: Inference on Compact Hypothesis Sets,” C. Uribe, A. Olshevsky, A. Nedich, [IEEE Transactions on Control of Network Systems](#), 2022.
50. “Non-asymptotic Concentration Rates in Cooperative Learning Part I: Variational Non-Bayesian Social Learning,” C. Uribe, A. Olshevsky, A. Nedich, [IEEE Transactions on Control of Network Systems](#), 2022.
49. “Communication-Efficient SGD: From Local SGD to One-Shot Averaging,” A. Spiridonoff, A. Olshevsky, Y. Paschalidis, [Proceedings of NeurIPS 2021](#).
48. “Deterministic and Randomized Actuator Scheduling with Guaranteed Performance Bounds,” M. Siami, A. Jadbabaie, A. Olshevsky, [IEEE Transactions on Automatic Control](#), 2021.
47. “Temporal Difference Learning as Gradient Splitting,” R. Liu, A. Olshevsky, [Proceedings of ICML 2021](#).
46. “Adversarial Crowdsourcing Through Robust Rank-One Matrix Completion,” Q Ma, A Olshevsky, [Proceedings of NeurIPS](#), 2020
45. “Minimax Rate for Learning From Pairwise Comparisons in the BTL Model,” J Hendrickx, A Olshevsky, V Saligrama, [Proceedings of ICML](#), 2020
44. “Minimax Rank-1 Factorization”, A. Olshevsky, J. Hendrickx, V. Saligrama, [Proceedings of AISTATS](#), 2020
43. “Robust Asynchronous Stochastic Gradient-Push: Asymptotically Optimal and Network-Independent Performance for Strongly Convex Functions,” A. Spiridonoff, A. Olshevsky. Y. Paschalidis, [Journal of Machine Learning Research](#), vol. 21, no. 58, pp. 1-47, 2020.
42. “Gradient Descent for Sparse Rank-One Matrix Completion for Crowd-Sourced Aggregation of Sparsely Interacting Workers,” Y. Ma, A. Olshevsky, V. Saligrama, C. Szepevari, [Journal of Machine Learning Research](#), vol. 21, no. 133, pp. 1-36, 2020.
41. “On A Relaxation of Time-Varying Actuator Placement,” A. Olshevsky, [IEEE Control Systems Letters](#), vol. 4. no. 3, pp. 656-661, 2020.
40. “Asymptotic Convergence Rate of Alternating Minimization for Rank One Matrix Completion,” R. Liu, A. Olshevsky, [IEEE Control Systems Letters](#), vol. 4, pp. 1139-1144, 2020
39. “Asymptotic Network Independence in Distributed Optimization for Machine Learning,” Shi Pu, Shi Pu, Alex Olshevsky, Ioannis Ch. Paschalidis, [IEEE Signal Processing Magazine](#), vol. 3, pp. 114-122, 2020.
38. “Graph Resistance and Ranking From Pairwise Comparisons”, A. Olshevsky, J. Hendrickx, V. Saligrama [Proceedings of ICML](#), 2019
37. “Graph Theoretic Analysis of Belief System Dynamics Under Logic Constraints,” A. Nedic, A. Olshevsky, C. Uribe, [Scientific Reports](#), 8843 (2019).
36. “On the Inapproximability of the Witsenhausen Problem,” A. Olshevsky, [IEEE Control Systems Letters](#), vol. 3, no. 3, pp. 529-534, 2019.

35. “Minimal Reachability is Hard to Approximate,” A. Jadbabaie, A. Olshevsky, G. Pappas, V. Tzoumas, **IEEE Transactions on Automatic Control**, vol. 64, no. 2, pp. 783-790, 2019.
34. “On Performance of Consensus Protocols Subject to Noise: Role of Hitting Times and Network Structure,” A. Jadbabaie, A. Olshevsky, **IEEE Transactions on Automatic Control**, vol. 64, no. 4, pp. 1389-1403, 2019.
33. “Crowdsourcing with Sparsely Interacting Workers,” Y. Ma, A. Olshevsky, V. Saligrama, C. Szepesvari, **Proceedings of ICML**, 2018.
32. “On (Non)Supermodularity of Average Control Energy,” A. Olshevsky, **IEEE Transactions on Control of Network Systems**, vol. 5, no. 3, pp. 1177-1181, 2018.
31. “Network Topology and Communication-Computation Tradeoffs in Distributed Optimization,” A. Nedic, A. Olshevsky, M. Rabbat, **Proceedings of the IEEE**, vol. 106, no. 5, pp. 1-24, 2018.
30. “Federated Learning of Predictive Models from Federated Electronic Health Records,” T. Brisimi, R. Chen, T. Mela, A. Olshevsky, Y. Paschalidis, W. Shi, **International Journal of Medical Informatics**, vol. 112, pp. 59-67, 2018.
29. “Linear Time Average Consensus and Distributed Optimization on Fixed Graphs,” A. Olshevsky, **SIAM Journal on Control and Optimization**, vol. 55, no. 6, pp. 3990-4014, 2017.
28. “Achieving Geometric Convergence for Distributed Optimization over Time Varying Graphs,” A. Nedic, A. Olshevsky, W. Shi, **SIAM Journal on Optimization**, vol. 27, no. 4, pp. 2597-2633, 2017.
27. “Fast Convergence Rates for Distributed Non-Bayesian Learning,” A. Nedic, A. Olshevsky, C. Uribe, **IEEE Transactions on Automatic Control**, vol. 62, no. 11, pp. 5538-5553, 2017.
26. “Distributed Resource Allocation on Dynamic Networks in Quadratic Time,” T. Doan, A. Olshevsky, **Systems & Control Letters**, vol. 99, pp. 57-63, 2017.
25. “Stochastic Gradient-Push for Strongly Convex Functions on Time-Varying Directed Graphs,” A. Nedic, A. Olshevsky, **IEEE Transactions on Automatic Control**, vol. 61, no. 12, pp. 3936-3947, 2016.
24. “Convergence Time of Quantized Metropolis Consensus over Time-Varying Networks,” T. Basar, S. R. Etesami, A. Olshevsky, **IEEE Transactions on Automatic Control**, vol. 61, no. 12, pp. 4048-4054, 2016.
23. “On Symmetric Continuum Opinion Dynamics,” J.M. Hendrickx, A. Olshevsky, **SIAM Journal on Control and Optimization**, vol. 54, no. 5, pp. 2872-2892, 2016.
22. “Eigenvalue Clustering, Control Energy, and Logarithmic Capacity,” A. Olshevsky, **Systems & Control Letters**, vol. 96, pp. 45-50, 2016.
21. “Nonuniform Line Coverage from Noisy Scalar Measurements,” P. Davison, N.E. Leonard, A. Olshevsky, M. Schwemmer, **IEEE Transactions on Automatic Control**, vol. 60, no. 7, pp. 1975-1980, 2015.
20. “Distributed Optimization over Time-Varying Directed Graphs,” A. Nedic, A. Olshevsky, **IEEE Transactions on Automatic Control**, vol. 60, no. 3, pp. 601-615, 2015.
19. “On Primivity of Sets of Matrices,” V. Blondel, R. Jungers, A. Olshevsky, **Automatica**, vol. 61, pp. 80-88, 2015.

18. "Cooperative Learning in Multi-Agent Systems From Intermittent Measurements," N. E. Leonard, A. Olshevsky, [SIAM Journal on Control and Optimization](#), vol. 53, no. 1, pp. 1-29, 2015.
17. "Minimal Controllability Problems," A. Olshevsky, [IEEE Transactions on Control of Network Systems](#), vol. 1, no. 3, pp. 249-258, 2014.
16. "How to Decide Consensus? A Combinatorial Necessary and Sufficient Condition and a Proof that Consensus is Decidable but NP-hard," V. Blondel, A. Olshevsky, [SIAM Journal on Control and Optimization](#), vol. 52, no. 5, pp. 2707-2726, 2014.
15. "Consensus with Ternary Messages," A. Olshevsky, [SIAM Journal on Control and Optimization](#), vol. 52, no. 2, pp. 987-1009, 2014
14. "Graph diameter, eigenvalues, and minimum-time consensus," J. M. Hendrickx, R. M. Jungers, A. Olshevsky, G. Vankeerberghen, [Automatica](#), vol. 50, no. 2, pp. 635-640, 2014.
13. "Nonuniform Coverage Control on the Line," N.E. Leonard, A. Olshevsky, [IEEE Transactions on Automatic Control](#), vol. 58, no. 11, pp. 2743-2756, 2013.
12. "Degrees Fluctuations and the Convergence Time of Consensus Algorithms," A. Olshevsky, J. N. Tsitsiklis, [IEEE Transactions on Automatic Control](#), vol. 58, no. 10, pp. 2626-2631, 2013.
11. "NP-Hardness for Deciding Convexity of Quartic Polynomials and Related Problems," A. A. Ahmadi, A. Olshevsky, P. A. Parrilo, J. N. Tsitsiklis, [Mathematical Programming](#), vol. 137, no.1-2, pp 453-476, 2013.
10. "Convergence Speed in Distributed Consensus and Averaging," A. Olshevsky, J.N. Tsitsiklis, [SIAM Review](#), vol. 53, No. 4, pp. 747 - 772, 2011.
9. "Distributed Anonymous Discrete Function Computation," J. M. Hendrickx, A. Olshevsky, J. N. Tsitsiklis, [IEEE Transactions on Automatic Control](#), vol. 56, no. 10, pp. 2276-2289, 2011.
8. "A Lower Bound for Distributed Averaging On the Line Graph," A. Olshevsky, J. N. Tsitsiklis, [IEEE Transactions on Automatic Control](#), vol. 56, no. 11, pp. 2694-2698, 2011.
7. "Matrix  $p$ -norms are NP-hard to approximate if  $p \neq 1, 2, \infty$ ," J.M. Hendrickx, A. Olshevsky, [SIAM Journal on Matrix Analysis and Applications](#), vol 31, no. 5, pp. 2802-2812, 2010.
6. "On Distributed Averaging Algorithms and Quantization Effects," A. Nedic, A. Olshevsky, A. Ozdaglar, J.N. Tsitsiklis, [IEEE Transactions on Automatic Control](#), vol. 54, no. 11, pp. 2506-2517, 2009.
5. "Convergence Speed in Distributed Consensus and Averaging," A. Olshevsky, J.N. Tsitsiklis, [SIAM Journal on Control and Optimization](#), vol 48, no. 1, pp. 33-55, 2009.
4. "On the NP-Hardness of Checking Matrix Polytope Stability and Continuous-Time Switching Stability," L. Gurvits, A. Olshevsky, [IEEE Transactions on Automatic Control](#), vol. 54, no. 2, pp. 337-341, 2009.
3. "On the Nonexistence of Quadratic Lyapunov Functions for Consensus Algorithms," A. Olshevsky, J.N. Tsitsiklis, [IEEE Transactions on Automatic Control](#), vol. 53, no. 11, pp. 2642-2645, 2008.

2. "Improved Approximation Algorithms for the Quality of Service Multicast Tree Problem," M. Karpinski, I. Mandoiu, A. Olshevsky, A. Zelikovsky, [Algorithmica](#), vol. 42, no. 2, pp. 109-120, 2005.
1. "Kharitonov's Theorem and Bezoutians," A. Olshevsky, V. Olshevsky, [Linear Algebra and its Applications](#), vol. 309, no. 1, pp.285-297, 2005.

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## OTHER CONFERENCES AND BOOK CHAPTERS

42. "Leakage Certification Revisited: Bounding Model Errors in Side-Channel Security Evaluations," O. Bronchain, J. M. Hendrickx, C. Massart, A. Olshevsky, F. Standaert, [Proceedings of Crypto 2019, Santa Barbara, USA, 2019](#).
40. "Improved Convergence Rate for Distributed Resource Allocation," A. Nedic, A. Olshevsky, W. Shi, [Proceedings of CDC 2018, the IEEE Conference on Decision and Control](#), Orlando, USA, 2018.
39. "Decentralized Consensus Optimization and Resource Allocation," A. Nedic, A. Olshevsky, W. Shi, in [Large Scale and Distributed Optimization](#), Springer Lecture Notes in Mathematics, ed. P. Gisselson and A. Rantzer, 2018.
38. "Limitations and Tradeoffs in Minimum Input Selection Problems," A. Jadbabaie, A. Olshevsky, M. Siami, [Proceedings of the American Control Conference](#), Milwaukee, USA, 2018.
37. "Fully Asynchronous Push-Sum With Growing Intercommunication Intervals," A. Olshevsky, Y. Paschalidis, A. Spiridonoff, [Proceedings of the American Control Conference](#), Milwaukee, USA, 2018, to appear.
36. "Geometrically Convergent Distributed Optimization with Uncoordinated Step-Sizes," A. Nedic, A. Olshevsky, W. Shi, C. Uribe, [Proceedings of the American Control Conference](#), 2017.
35. "Fast Algorithms for Distributed Optimization and Hypothesis Testing: A Tutorial," A. Olshevsky, [Proceedings of the IEEE Conference on Decision and Control](#), Las Vegas, USA, 2017.
34. "A Tutorial on Distributed (Non-Bayesian) Learning: Problem, Algorithm, and Results," A. Nedic, A. Olshevsky, C. Uribe, [Proceedings of the IEEE Conference on Decision and Control](#), Las Vegas, USA, 2017.
33. "A Geometrically Convergent Method for Distributed Optimization over Time-Varying Graphs," A. Nedic, A. Olshevsky, W. Shi, [Proceedings of the IEEE Conference on Decision and Control](#), Las Vegas, USA, 2017.
32. "Distributed Learning with Infinitely Many Hypotheses," A. Nedic, A. Olshevsky, C. Uribe, [Proceedings of the IEEE Conference on Decision and Control](#), Las Vegas, USA, 2017.
31. "On Performance of Consensus Protocols Subject to Noise: Role of Hitting Times and Network Structure," A. Jadbabaie, A. Olshevsky, [Proceedings of the IEEE Conference on Decision and Control](#), Las Vegas, USA, 2017.
30. "Distributed Gaussian Learning over Time-Varying Directed Graphs," A. Nedic, A. Olshevsky, C. Uribe [Proceedings of Asilomar 2016, the 51st Asilomar Conference on Signals, Systems, and Computers](#), Monterey, USA, 2016.

29. "Network Independent Rates in Distributed Learning," A. Nedic, A. Olshevsky, C. Uribe, to appear in Proceedings of the [American Control Conference](#), Boston, MA, 2016.
28. "Linearly Convergent Decentralized Consensus Optimization over Directed Networks," A. Nedic, A. Olshevsky, W. Shi, Proceedings of [GlobalSIP 2016, the IEEE Conference on Signal and Information Processing](#), Washington DC, USA, 2016.
27. "Linear Time Average Consensus on Fixed Graphs," A. Olshevsky, Proceedings of the [5th IFAC Workshop on Distributed Estimation and Control in Networked Systems](#), Philadelphia, PA, 2015.
26. "Nonasymptotic Convergence Rates for Cooperative Learning Over Time-Varying Directed Graphs," A. Nedic, A. Olshevsky, C. Uribe, Proceedings of the [American Control Conference](#), Chicago, IL, 2015.
25. "Minimum Input Selection for Structural Controllability," A. Olshevsky, Proceedings of the [American Control Conference](#), Chicago, IL, 2015.
24. "Fast Convergence of Quantized Consensus Using Metropolis Weights," T. Basar, S. R. Etesami, A. Olshevsky, Proceedings of the [53rd IEEE Conference on Decision and Control](#), Los Angeles, CA, USA, 2014.
23. "Focused First-Followers Accelerate Aligning Followers with the Leader in Reaching Network Consensus," M. Cao, A. Olshevsky, W. Xia, Proceedings of the [18th IFAC World Congress](#), 2014.
22. "Distributed Optimization of Strongly Convex Functions on Directed Time-Varying Graphs," A. Nedic, A. Olshevsky, Proceedings of the [1st IEEE Conference on Signal and Information Processing](#), Austin, TX, USA, 2013.
21. "On Symmetric Continuum Opinion Dynamics: Convergence, but Sometimes Only in Distribution," J.M. Hendrickx, A. Olshevsky, Proceedings of the [52nd IEEE Conference on Decision and Control](#), Florence, Italy, 2013.
20. "On Primitivity of Matrix Sets," V. Blondel, R. Jungers, A. Olshevsky, Proceedings of the [52nd IEEE Conference on Decision and Control](#), Florence, Italy, 2013.
19. "Distributed Optimization over Time-Varying Graphs," A. Nedic, A. Olshevsky, Proceedings of the [52nd IEEE Conference on Decision and Control](#), Florence, Italy, 2013.
18. "Cooperative Learning in Multi-Agent Systems from Intermittent Measurements," N.E. Leonard, A. Olshevsky, Proceedings of the [52nd IEEE Conference on Decision and Control](#), Florence, Italy, 2013.
17. "Consensus with Ternary Messages," A. Olshevsky, Proceedings of the [52nd IEEE Conference on Decision and Control](#), Florence, Italy, 2013.
16. "Combinatorial bounds and Scaling Laws for Noise Amplification in Networks," A. Jadbabaie, A. Olshevsky, Proceedings of the [European Control Conference](#), Zurich, Switzerland, 2013.
15. "On the Cost of Deciding Consensus," V. Blondel, A. Olshevsky, Proceedings of the [51st IEEE Conference on Decision and Control](#), Maui, HI, 2012.
14. "Nonuniform Coverage Control on the Line," N.E. Leonard, A. Olshevsky, Proceedings of the [50th IEEE Conference on Decision and Control](#), Orlando, FL, December 2011.

13. "Degree Fluctuations and the Convergence Time of Consensus Algorithms," A. Olshevsky, J.N. Tsitsiklis, Proceedings of the **50th IEEE Conference on Decision and Control**, Orlando, FL, December 2011.
12. "A Lower Bound on Distributed Averaging," A. Olshevsky, J.N. Tsitsiklis, Proceedings of the **49th IEEE Conference on Decision and Control**, Atlanta, GA, December 2010.
11. "Distributed Anonymous Function Computation in Information Fusion and Multiagent Systems," J. M. Hendrickx, A. Olshevsky, J.N. Tsitsiklis, Proceedings of the **47th Allerton Conference on Communication, Control, and Computing**, Monticello, Illinois, 2009.
10. "Distributed Subgradient Methods and Quantization Effects," A. Nedic, A. Olshevsky, A. Ozdaglar, J.N. Tsitsiklis, Proceedings of the **47th IEEE Conference on Decision and Control**, Cancun, Mexico, December 2008.
9. "On Distributed Averaging Algorithms and Quantization Effects," A. Nedic, A. Olshevsky, A. Ozdaglar, J.N. Tsitsiklis, Proceedings of the **47th IEEE Conference on Decision and Control**, Cancun, Mexico, 2008.
8. "Stability Testing of Matrix Polytopes," L. Gurvits, A. Olshevsky, Proceedings of the **9th European Control Conference**, Kos, Greece, 2007.
7. "Quality of Service in Multimedia Multicast Routing," I.I. Mandoiu, A. Olshevsky, and A. Zelikovsky, book chapter in **Approximation Algorithms and Metaheuristics**, T.E. Gonzalez (editor), Chapman & Hall, 2007.
6. "Convergence Speed in Distributed Consensus and Averaging," A. Olshevsky, J.N. Tsitsiklis, Proceedings of the **45th IEEE Conference on Decision and Control**, San Diego, USA, 2006.
5. "Convergence in Multiagent Coordination, Consensus, and Flocking," V. D. Blondel, J. M. Hendrickx, A. Olshevsky, and J. N. Tsitsiklis, Proceedings of the **44th IEEE Conference on Decision and Control**, Seville, Spain, December 2005.
4. "Network Lifetime and Power Assignment in Ad-Hoc Wireless Networks," G. Calinescu, S. Kapoor, A. Olshevsky and A. Zelikovsky, Proceedings of the **11th European Symposium on Algorithms**, September 2003, LNCS 2832, pp. 114-126.
3. "Primal-Dual Algorithms for QoS Multimedia Multicast," G. Calinescu, C. Fernandes, I. Mandoiu, A. Olshevsky, K. Yang and A. Zelikovsky, Proceedings of the **IEEE Global Communications Conference**, December 2003, pp. 3631-3635.
2. "A comrade-matrix-based derivation of the different versions of fast cosine and sine transforms," A. Olshevsky, V. Olshevsky, J. Wang, **Proceedings of SPIE, Advanced Signal Processing Algorithms, Architectures, and Implementations XIII**, vol. 5205, Dec. 2003, pp.399-410.
1. "Improved Approximation Algorithms for the Quality of Service Steiner Tree Problem," M. Karpinski, I. Mandoiu, A. Olshevsky, A. Zelikovsky, Proceedings of the **8th Workshop on Algorithms and Data Structures**, Ottawa, Canada, August 2003.

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## PHD THESIS

title *Efficient Information Aggregation Strategies in Distributed Control and Signal Processing*

supervisor John N. Tsitsiklis



award date Sept. 2010

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## PROFESSIONAL SERVICE

- Member of the Editorial Board, IEEE Transactions on Automatic Control, 2020–.
- Member of the Editorial Board, IEEE Transactions on Control of Network Systems, 2019–.
- Associate Editor, Special Issue on Dynamics and Behaviors in Social Networks, IEEE Transactions on Control of Network Systems, 2019-2020.
- Member of Program Committee, the IEEE Global Conference on Signal and Information Processing, 2018.
- Member of Program Committee, the IEEE Global Conference on Signal and Information Processing, 2017.
- Member of Program Committee, the IEEE Global Conference on Signal and Information Processing, 2016.
- Session organizer and chair, Distributed and Large-Scale Optimization I, IEEE Conference on Decision and Control, 2016.
- Session organizer and chair, Distributed and Large-Scale Optimization II, IEEE Conference on Decision and Control, 2016.
- Session organizer and chair, Distributed and Large-Scale Optimization III, IEEE Conference on Decision and Control, 2016.
- Session organizer and chair, Distributed Dynamics and Control I, Allerton 2016.
- Session organizer and chair, Distributed Dynamics and Control II, Allerton 2016.
- Program Chair, NecSys '15 (the 5th IFAC Workshop on Distributed Estimation and Control in Networked Systems, 2015).
- Session organizer and chair, Dynamics and Control of Network Systems, Allerton 2015.
- Session organizer and chair, Distributed Control, Allerton 2015.
- Program committee, American Control Conference, 2014.
- Session organizer and chair, Dynamics and Control of Decentralized Systems I, Allerton 2014.
- Session organizer and chair, Dynamics and Control of Decentralized Systems II, Allerton 2014.
- Session organizer and chair, Decentralized Dynamics and Optimization in Networks I, IEEE Conference on Decision and Control, 2013.
- Session organizer and chair, Decentralized Dynamics and Optimization in Networks II, IEEE Conference on Decision and Control, 2013.
- Session organizer and chair, Decentralized Dynamics and Optimization in Networks III, IEEE Conference on Decision and Control, 2013.
- Best Student Paper Award Committee, American Control Conference, 2013.
- Session organizer and chair, Decentralized & Distributed Control I, Allerton 2013.
- Session organizer and chair, Decentralized & Distributed Control II, Allerton 2013.

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## TEACHING

- Spring 2022 Instructor for SE/EC/ME 724, “Advanced Optimization Techniques and Methods,” a graduate-level topics course.
- Fall 2021 Instructor for EC 400, “Introduction to Reinforcement Learning,” an undergraduate-level introduction to reinforcement learning.
- Spring 2021 Instructor for EC 700, “Introduction to Reinforcement Learning,” a graduate-level topics course.
- Fall 2019 Instructor for EC/SE 524, “Optimization Theory and Methods,” a first-year graduate course.
- Spring 2018 Instructor for EC 517, “Introduction to Information Theory,” a first-year graduate course.
- Fall 2017 Instructor for EC 381, “Probability Theory in Electrical and Computer Engineering,” a junior-level undergraduate course.
- Spring 2017 Instructor for SE/EC/ME 724, “Advanced Optimization Techniques and Methods,” a graduate-level topics course.
- Spring 2015, Instructor for IE 510, “Nonlinear Programming,” a first-year graduate course.  
Spring 2016
- Fall 2013, Instructor for GE 320, “Introduction to Control Systems,” a junior-level undergraduate course.  
Fall 2014
- Spring 2013 Instructor of ECE 528/GE 520, “Nonlinear Systems and Control,” a graduate first-year course.
- Spring 2013 Instructor for GE 598, “Control of Distributed Systems,” a graduate-level special topics course.
- Fall, Spring Instructor GE 424, “State-Space Design for Control,” a senior-level undergraduate course.  
2012

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## SENIOR DESIGN PROJECTS SUPERVISED

- Fall 2016 Human resources data dashboard system design and development; General Dynamics, sponsor.
- Fall 2015 Primary care facility model specification development; OSF Health Care, sponsor.
- Fall 2014 Powder paint line and laser cutting optimization; VanFab Inc, sponsor.
- Spring 2014 Injection mold making and process efficiency analysis; A-1 Tool Corporation, sponsor.
- Fall 2013 New plant payout for coupling machining operations and manufacturing; Lovejoy Inc, sponsor.

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## PRESENTATIONS

- Yahoo, Seminar, Fall 2021
- Tel-Aviv University, ECE Seminar, Fall 2021
- Michigan State, Seminar, Fall 2021
- Yandex, Seminar, Spring 2021
- Rensselaer Polytechnic Institute, Math Department Seminar, Spring 2021
- Harvard, ECE Seminar, Boston, Oct 2020.
- ICML, Virtual, June 2020.
- MIT, LIDS Seminar, Boston, May 2020.

- KTH, Electrical Engineering Department, Stockholm, Sweden, Aug 2019.
- ACC Workshop on Analysis and Control of Complex Networks, July 2019.
- ICML, Long Beach, USA, Dec 2019.
- International Conference on Continuous Optimization, Berlin, Aug 2019.
- Boston University Data Science Day, Feb 2019.
- Boston University, ECE seminar, May 2018.
- Air Force Dynamics and Control Program Meeting, Sep 2017.
- DIMACS Workshop on Distributed Optimization, Information Processing, and Learning, Aug 2017.
- Symposium on Controlling Complex Systems, NetSci, June 2017.
- IEEE Conference on Decision and Control, Dec 2016.
- Harvard University, EE Department, Nov 2016.
- Queen's University, Mathematics Colloquium, Nov 2016.
- Air Force Dynamics and Control Program Meeting, Aug 2016.
- Mathematical Theory of Networks and Systems Conference, Jul 2016.
- Boston University, joint ECE-ME seminar, Mar 2016.
- Midwestern Optimization Meeting, Oct 2015.
- American Control Conference, Jul 2015.
- International Symposium on Mathematical Programming, Jul 2015.
- Air Force Young Investigator Meeting, Jun 2015.
- INFORMS Annual Meeting, Nov 2014.
- Banff Workshop on Optimal Cooperation, Communication, and Learning in Decentralized Systems, Oct 2014.
- Midwestern Optimization Meeting, Loyola University, Oct 2014.
- University of Minnesota, IMA Thematic Year on Control Theory, Jun 2014.
- IMSE Symposium on Applied Geometry, Topology, and Networks, Feb 2014.
- University of Chicago, Department of Statistics, Jan 2014
- IEEE Conference on Decision and Control, Dec 2013
- Systems Control and Optimization: a workshop in honor of John Tsitsiklis, Jul 2013.
- University of Groningen, Dept. of Electronic and Electrical Engineering, Jul 2013.
- European Control Conference, Jul 2013.
- SIAM Conference on Applications of Dynamical Systems, May 2013.
- IEEE Conference on Decision and Control, Dec 2012.
- Universite Catholique de Louvain, Dept. of Mathematical Engineering, June 2012.
- IEEE Conference on Decision and Control, Dec 2011.
- Princeton Center for Computational Intractability, Oct. 2011.
- University of Toronto, Dept. of Electrical and Computer Engineering, Apr 2011.
- University of Illinois at Urbana-Champaign, Dept. of Industrial and Enterprise Systems Engineering, Mar 2011.
- University of Notre Dame, Dept. of Electrical Engineering, Mar 2011.
- IEEE Conference on Decision and Control, Dec 2010.

- Princeton University, Dept. of Computer Science, Nov 2010.
- McGill University, Dept. of Electrical and Computer Engineering, Apr 2010.
- Princeton University, Dept. of Mechanical and Aerospace Engineering, Mar 2010.
- University of Waterloo, Dept. of Electrical and Computer Engineering, Mar 2010.
- MIT LIDS Conference, Jan 2010
- Allerton Conference on Communication, Control, and Computing, Sep 2009.
- Northeast Control Workshop, Apr 2009
- MIT LIDS Conference, Jan 2009
- IEEE Conference on Decision and Control, Dec 2008
- MIT LIDS Conference, Jan 2008
- MIT LIDS Conference, Jan 2007
- IEEE Conference on Decision and Control, Dec 2006
- MIT LIDS Conference, Jan 2006
- SIAM Applied Linear Algebra Conference, Jul 2003.