Alex Olshevsky

Curriculum Vitae

Department of Electrical and Computer Engineering
Boston University
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Boston, MA, 02215
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Research interests

Reinforcement learning, distributed optimization, control of multi-agent and networked systems.

Academic Positions

May 2019 — Associate Professor, Boston University, Department of Electrical and Computer Engineering.

Sep 2016 — May 2019 Assistant Professor, Boston University, Department of Electrical and Computer Engineering.

Jan 2012 — Aug 2016 Assistant Professor, University of Illinois at Urbana-Champaign, Department of Industrial and Enterprise Systems Engineering.

Sep 2010 — Jan 2012 Postdoctoral Scholar, Princeton University, Department of Mechanical and Aerospace Engineering.

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

2023-2026 "Federated Learning for Predicting Electricity Consumption with Mixed Global/Local Models," National Science Foundation, Lead PI, co-PIs are Yannis Paschalidis, Michael Caramanis, and Venkatesh Saligrama. $1,200,000.

2023-2026 "Linear Speedup in Distributed Reinforcement Learning," Army Research Office, Single PI, $448,917.

2023-2026 "EMERGE: ExaEpi for elucidating Multiscale Ecosystem complexities for Robust, Generalized Epidemiology," Department of Energy, subcontract, co-PI along with Helen Jenkins. PI: Yannis Paschalidis, $449,944

2023-2024 "Sensorimotor Human-Machine Systems," co-PI. PI: Eshed-Ohn Bar, $106,000.

2023-2026 "Computationally Efficient Methods for Control of Epidemics on Networks," NSF Energy, Power, Control and Networks Division, $352,394, Single PI.

2023-2026 "How Much of Reinforcement Learning is Gradient Descent?" NSF Communications and Information Foundations Program, $301,244, Single PI.

2019-2024 "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.

Past Funded Projects

2019-2023 "Effectively Decentralizing Optimization Over Large-Scale Networks," NSF Energy, Power, Control and Networks Division, $300,000, Single PI.

2018-2021 "Effective Control of Leader-Follower Networks," $360,000, ARO Information Structure, Causality, and Dynamics for Control Program, Single PI.

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.

Research Group

- Apostolos Rikos, SE Postdoctoral Scholar.
- Arsenii Mustafin, CS graduate student.
- Haoxing Tian, ECE graduate student.
- Param Budraja, ECE graduate student.
- Ryan Yu, CS graduate student.

Alumni

- Rui Liu, Ph.D. 2022, currently at Pinterest.
- Qianqian Ma, Ph.D. 2022, currently at LinkedIn.
- 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.

Awards and Honors

2019 Best Paper, International Medical Informatics Association, Section on Clinical Research Informatics.

2015 Program Chair, NecSys '15 (the 5'th 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.

Journal publications and ML Conferences

58. "Optimal Fixed Lockdown for Pandemic Control," Q. Ma, Y. Y. Liu, A. Olshevsky, **IEEE Transactions on Automatic Control**, to appear
57. "Convergence of Actor-Critic with Multi-Layer Neural Networks," H. Tian, I. Paschalidis, A. Olshevsky, **Proceedings of NeurIPS 2023**.
56. "On the Performance of Temporal Difference Learning with Neural Networks," H. Tian, I. Paschalidis, A. Olshevsky, **Proceedings of ICLR 2023**.
55. "A Small Gain Analysis of Single Timescale Actor-Critic," A. Olshevsky, B. Gharesifard, **SIAM Journal on Control and Optimization**, 2023.
54. "Distributed TD(0) with Almost No Communication," R. Liu, A. Olshevsky, **IEEE Control System Letters**, 2023.
53. "Asymptotic Network Independence and Step-Size for a Distributed Subgradient Method," A. Olshevsky, **Journal of Machine Learning Research**, 2022.
52. "A Sharp Estimate on the Transient Time of Distributed Stochastic Gradient Descent," S. Pu, A. Olshevsky Y. Paschalidis, **IEEE Transactions on Automatic Control,** 2022.
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.

Other conferences and book chapters

43. "The Role of Systems Theory in Control Oriented Learning," M. Sznaier, A. Olshevsky, E. Sontag, **Proceedings of MTNS 2022, the Mathematical Theory of Networks and Systems**, Bayreuth, Germany, 2022.

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 Conferencence 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.

Professional Service

- Area Chair, ICLR 2024
- Area Chair, NeurIPS 2023
- Area Chair, ICML 2023
- Area Chair, NeurIPS, 2022
- Area Chair, NeurIPS, 2021
- Member of the Editorial Board, IEEE Transactions on Automatic Control, 2020–.
- Member of the Editorial Board, IEEE Transactions on Control of Network Systems, 2019–2022.
- 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.

Teaching

Spring 2024	Instructor for EC 724, "Introduction to Nonlinear Optimization," a first-year graduate course.
Fall 2023	Instructor for EC 418, "Introduction to Reinforcement Learning," a senior-level undergraduate course.
Spring 2023	Instructor for EC 700, "Introduction to Reinforcement Learning," a graduate-level topics course.
Fall 2022	Instructor for EC 418, "Introduction to Reinforcement Learning," a senior-level undergraduate course.
Summer 2022	Instructor for a graduate topics course taught at the University of Paris-Saclay entitled "Dynamics and Algorithms on Networks."

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	Intructor 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, Spring 2016	Instructor for IE 510, “Nonlinear Programming,” a first-year graduate course.
Fall 2013, Fall 2014	Instructor for GE 320, “Introduction to Control Systems,” a junior-level undergraduate course.
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 2012	Instructor GE 424, “State-Space Design for Control,” a senior-level undergraduate course.

Presentations

- Tutorial at the Allerton Conference, Fall 2023
- Rutgers ECE Colloquium, Henry Irons Lecture, Spring 2023
- UCLA EE Department Seminar, Fall 2022
- SIAM Annual Meeting, Summer 2022
- Purdue University, ICON Center Seminar, Spring 2022
- Temple University, ECE Seminar, Spring 2022
- 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 Colloqiuim, 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.