



MIT INSTITUTE FOR DATA,
SYSTEMS, AND SOCIETY

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Munther A. Dahleh, Professor of Electrical Engineering and Computer Science
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CONTACT & PERSONAL INFORMATION
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 Citizenship: USA
 DOB: August 27, 1962
 Membership: IEEE

EDUCATION	<u>School</u>	<u>Degree</u>	<u>Date</u>
	Texas A&M University	BS, EE	1983
	Rice University	PhD	1987

PRINCIPAL FIELDS OF INTEREST

Data Markets: Real-time markets for digital goods, including data. Addressing issues related to combinatorial auctions, fairness, externalities, and real-time price updates..

Networked Systems: Foundational theory for the interaction between physical, social, economic, and information networks, Information propagation, co-design of distributed decisions and incentives, learning network structure from data.

Fragility and Systemic Risk: The development of a foundational theory for the early detection and control of systemic risk resulting from idiosyncratic disturbance affecting components of a networked system.

Transportation Systems: Dynamic models of congestion under disruptions, dependence of fragility on network topology, cascaded failures, value of side information on performance.

Financial Systems: Bubble formations, runs, risk analysis of networks heterogeneous financial institutions.

The Future Electric Grid: Renewable generation, real-time demand response, impact of storage, market volatility, risk analysis, outages, Market Architecture.

EXPERIENCE & APPOINTMENTS	<u>Employer</u>	<u>Rank</u>	<u>Beginning</u>	<u>Ending</u>
	MIT EECS	Assistant Professor	1987	1991
	MIT EECS	Assoc. Professor	1991	1994
	MIT EECS	Assoc. Professor w/ Tenure	1994	1998
	Caltech	Visiting Professor	1993	1993
	MIT EECS	Professor	1998	Present
	Infolenz	CEO	2001	2002
	MIT LIDS	Associate Director	2007	2010
	MIT LIDS	Director	2010	2011
	MIT EECS	Associate Dept. Head	2011	2013



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MIT ESD	Acting Director	2013	2015
MIT (New Unit)	Director Designate	2013	2015
MIT IDSS	Director	2015	Present

CONSULTING RECORD	<u>Firm</u>	<u>Role</u>	<u>Beginning</u>	<u>Ending</u>
	NASA(JSC) & Draper Labs	Consultant	1987	1990
	FIAT research center	Consultant	1990	1992
	BBN	Consultant	1992	1995
	Convolve	Consultant	1995	2010
	Alphatech	Consultant	1997	1999
	Brigham and Women's	Consultant	1998	2002
	Crescent Technologies	Founder	1996	2000
	Infolenz Co.	Founder	2000	2011
	PointRight	Consultant	2009	2010
	Myworldinvesting Co.	Consultant	2007	2012
	BAE	Consultant	2009	2012
	Point Right	Board of Directors	2014	Present
	UM6P/OCF	Strategy Consultant	2017	Present
	C6	Scientific Board	2018	Present
	EnterWork	Advisory Board	2018	Present

PATENT M.A. Dahleh, B. Bamieh, and F. Paganini. Architecture for distributed control of actuator and sensor arrays, US Patent no 6560493, February 1999.

G. Katsargyri, M.A. Dahleh and M Rinehart, Optimally controlling hybrid electric vehicles path forecasting, Serial Number 61/353,401, filed June 10, 2010.

G. Katsargyri, M.A. Dahleh and M Rinehart, Hybrid electric vehicle and method of control using path forecasting, Serial Number 13/157,533, filed June 10, 2010.

S. Sarma, S. Santeniello, S.L. Burns, M.A. Dahleh, Seizure detection device and systems, Serial Number 14/065,714, filed October 29, 2013.

R. Faghih, M.A. Dahleh, and E. Brown, System and method for Neuroendocrine control Serial Number 15/170,900, filed June 1, 2016.

M.A. Dahleh, G. Katsargyri, I. Kolmanovsky, M.L. Kuang, J.O. Michelini, A.M. Phillips and M.D. Rinehart, Path Dependent Receding Horizon Control Policies for Hybrid Electric Vehicles, US patent No. 9545915, issued on 01/17/2017.

PROFESSIONAL SERVICE	<u>Activity</u>	<u>Beginning</u>	<u>Ending</u>
	Associate Editor of IEEE Transactions on Automatic Control	1992	1995
	Associate Editor of Systems and Control Letters	1994	2000
	American University of Beirut Visiting Committee	2006	2006
	Prince Sultan University Visiting Committee	2009	2011
	Los Alamos National Labs Visiting Committee Chair	2008	Present
	Research Advisory Committee, Masdar Institute, Abu Dhabi	2013	Present
	The Institute for Systems Research External Review Committee, Univ. of Maryland	2016	2016

Steering committee, Skoltech, Moscow	2016	Present
Steering committee, Italian human Technopole Project	2016	Present

Committees

Served on proposal review panels (NSF)	1990	Present
Served on strategic panels (NSF, ARO, AFOSR)	1990	Present
Program Committees of Various Conferences	1990	Present
Control Systems Award committee	1998	2001
AFOSR – Panel on Future Direction in Control	2001	2002
Donald P. Eckman Award committee	2008	2010
NSF panel on “Past, Present, and Future of Control.”	2009	2010

Recent Conference Organized

Paths Ahead in the Science of Information and Decision Systems	2009	2000
Workshop on Information and Decisions in Social Networks, LIDS	2011	2011
MIT Statistics Symposium	2015	2015
MIT Finance Symposium	2016	2016
Institute for Data, Systems, and Society Launch Event	2016	2016
Data, Analytics, and Risk and Finance, IDSS	2016	2016
Statistics and Data Science Conference, IDSS	2017	2018

**AWARDS
RECEIVED**

<u>Award:</u>	<u>Date:</u>
• IFAC Fellow	2016
• George S. Axelby Outstanding Paper Award, “Robust Distributed Routing in Dynamical Networks-Part II: Strong Resilience, Equilibrium Selection and Cascaded Failures” (with Como, Savla, Acemoglu, Frazzoli), IEEE CSS, Dec. 2015	2015
• William Coolidge Chaired Professorship	2014
• George S. Axelby Outstanding Paper Award (with Martins), for papers appearing in 2009-2010, IEEE Transactions on Automatic Control	2010
• Hugo Schuck Award for Theory (for the paper coauthored with Martins), Control Systems Society	2008
• George S. Axelby Outstanding Paper Award (with Bamieh and Paganini), for papers appearing in 2003-2004, IEEE Transactions on Automatic Control	2004
• IEEE Fellow	2000
• Graduate Council Teaching Award, MIT	1995
• Donald P. Eckman Award of the American Control for best control engineer under 35	1993
• Finmeccanica Career Development Chair	1992
• Presidential Young Investigator Award	1991
• George S. Axelby Outstanding Paper Award (with Pearson), for papers appearing in 1987-1988, IEEE Transactions on Automatic Control	1989
• Ralph Budd Award For Best Engineering Thesis, Rice University	1987

- Graduated Suma Cum Laude, Texas A&M University 1983

**LEADERSHIP
POSITIONS**

<u>Position:</u>	<u>Beginning</u>	<u>Ending</u>
<ul style="list-style-type: none"> • Founding Director of Institute for Data, Systems and Society Heading the new Institute with the mission to address societal challenges using information and decision systems, statistics and data science, and social sciences. Responsibilities include setting up new educational programs, research initiatives, faculty promotion and hiring, and fund raising. Institute comprises two research laboratories, center for statistics and data science, and offers a PhD degree social and engineering systems and a masters in technology and policy. Operating budget is \$20-25million per year. 	2015	Present
<ul style="list-style-type: none"> • Director of Technology Policy Program This is a forty-year old research masters program that focuses on technology policy. It is part of IDSS. As the director, I am revising the program to meet the 21st century challenges in technology policy and I am incorporating statistics and data science as an integral part of the program. 	2015	Present
<ul style="list-style-type: none"> • Acting Director of Engineering Systems Division Heading the division through a transition period. Responsibilities include: all personnel matters including promotions and tenure and performance evaluations. Management of all academic matters as well as research activities. 	2013	2015
<ul style="list-style-type: none"> • Director Designate of a new Entity Leadership in founding a new entity focusing on information and decision systems, statistics, and socio-technical systems. Responsibilities include running four committees comprising over 40 faculty from MIT to prepare a strategic plan. 	2013	2015
<ul style="list-style-type: none"> • Associate Department Head of EECS Leading the EE side of the EECS department (75 faculty). Responsible for faculty search including identifying strategic areas for growth, personnel matters such as promotion and tenure, faculty evaluation, curricular development, revamping department academic structure, new undergraduate initiatives. 	2011	2013
<ul style="list-style-type: none"> • Chairman of the Committee on Discipline Chair of the standing committee on Discipline dealing with all issues of academic and behavioral misconduct. 	2011	2014
<ul style="list-style-type: none"> • Director of Laboratory for Information and Decision Systems, MIT Responsible for intellectual strategic planning, fund raising, junior faculty development, space management, and maintaining the growth of the Lab. Management of over \$7 million in 	2010	2011

research funds.

- **Associate Director of the Laboratory for Information and Decision Systems, MIT** 2007 2010
 Responsible for intellectual strategic planning, junior faculty development, space management, and maintaining the growth of the Lab.
- **Chair of Area I in EECS, MIT** 2006 2009
 Chairman of “Systems and Control, Communication, and Signal Processing,” EECS, MIT. Responsible for academic offerings, curricular development, admission, monitoring and qualification of graduate students, and the development of a strategic plan for the Area.
- **Member of the EECS Personnel Committee, EECS** 2004 Present
 Member of the standing 10-members committee that advises the department heads on all promotion and tenure cases of junior faculty, EECS, MIT. Committee also addresses all personnel issues for all EECS faculty (125 faculty members).
- **CEO and Co-Founder of Infolenz** 2000 2003
 Led the company through the first round of funding and led the scientific team in developing the first concepts for scientific marketing. Was heavily involved in securing 5 major initial contracts with industry that served as flagship contracts for the company. Maintained a consulting relation with the company until the company was folded in 2011.
- **House Master at MacGregor House, MIT** 1995 2015
 Faculty supervisor and resident heading a dorm of 350 students. Has the responsibility of managing the resident tutors, interacting with the dean's office on issues related to students' life, establishing continuing education programs in the residential house, and monitoring the students' well-being. Responsibility also includes administering educational and social programs for the house.
- **Principal Investigator of Research** 1987 Present
 Running a research group of an average of 8 PhD students and 2 postdoctoral fellows, LIDS, MIT. Research program resulted in 28 PhD graduates, 10 postdoctoral fellows, many of whom are now professors in leading academic institutions.

COURSES
TAUGHT AT
MIT

- 6.041/6.431 - Probabilistic Systems Analysis
- 6.241 - Dynamic Systems and Control
- 6.231 - Dynamic Programming and Stochastic Control
- 6.291 - Seminar in Systems, Communications, and Control Research
- 6.435 - Statistical Inference and System Identification
- 6.207 - Networks
- 6.6s – Multivariable Feedback Control Design

- 6.66s – Scientific Marketing and Offer Design: Pricing, Bundling, and Customer Targeting
- Short Programs SDN - Social Data and Networks (Continuing Education)

**RECENT
PLENARY
LECTURES AT
MAJOR
CONFERENCES**

- Market Place for Data: An algorithmic approach, Simon Institute. 2018
- Networked Systems and Society: Performance and Risk Tradeoffs, European Control Conference, Aalborg, DK. 2016
- Fragility of Networked Systems, Optimization Day, Montreal, Canada 2016
- “Fragility of Networked Systems”, CDC, Osaka, Japan 2015
- “Resilience in Networked Systems,” 2015 Graph Exploitation Symposium, Lincoln Labs. 2015
- “Resilience in Networked Systems,” NecSys, the 5th IFAC Workshop on Distributed Estimation and Control in Networked Systems. Univ. of Pennsylvania. 2015
- “Resilience & Risk in Networked Systems”, Mediterranean Conference, Palermo, Italy. 2014
- “Tradeoffs Between Efficiency and Risk in the Smart Grid,” international conference on smart grid communication, Tainan, Taiwan. 2012
- “Resilience of Transportation Networks,” International Conference on Informatics in control, Automation, and Robotics, Rome, Italy. 2012
- “Reliability vs Price Volatility in the Future Power Grid,” National Control Engineering Students Workshop, College Park, Maryland 2011
- “Learning over Complex Social Network,” Spain-Italy-Netherlands Meeting on Game Theory, Palermo, Italy 2010
- “Fundamental Limitations of Networked Decision Systems,” Riken Mathematical Sciences Workshop, Kamisuwa, Japan 2010
- “Fundamental Limitations of Networked Decision Systems,” Asian Control Conference, Hong Kong 2009
- “Learning over Complex Social Networks”, SYSID, Saint-Malo, France 2009
- “Information Theoretic Bounds for Distributed Computation,” Yale University workshop. 2008
- “Reduction of Hidden Markov Models”, ACODS, Bangalore, India 2007
- “Fundamental Limitation of Noise Cancellation Imposed by Causality, Stability, and Channel Capacity,” Mathematical Theory for Networks and Systems, Kyoto, Japan 2006
- “Analysis and Synthesis of Complex Systems,” Mediterranean Conference on Control and Automation, Lisbon, Portugal 2003

**BOOKS &
CHAPTERS**

1. M.A. Dahleh and I. Diaz-Bobillo. “Control of Uncertain Systems: A Linear Programming Approach”. Prentice-Hall, 1995.
2. N. Elia, and M. A. Dahleh. “Computational Methods for Controller Design”. Lecture notes in Information Sciences Series, Springer Ver-Lag, 1998
3. M.A. Dahleh, M. Dahleh, and G. Verghese. “Lectures on Dynamic Systems and Control”. In preparation. (Available on OCW).
4. M. A. Dahleh, “ \mathcal{H}_1 Robust Control: Theory, Computation and Design”. Control

Handbook, CRC Press, pp. 37-44, 1995.

5. M.A. Dahleh and M. Rinehart. "Networked Control Systems". A chapter in "The Impact of Control Technology". T. Samad and A.M. Annaswamy (eds.), 2011.

PAPERS IN
PROGRESS

1. Agarwal A., Dahleh M.A., Sarkar T., "A Marketplace for Data: An Algorithmic Solution", published, 20th ACM Conference on Economics and Computation (EC) 2019, arXiv: 1805.08125.
2. Saxena S., Sarma V.S., Dahleh M.A., "Performance Limitations in Sensorimotor Control: Tradeoffs between Neural Computing and Accuracy in Tracking Fast Movements". Submitted to PNAS 2018, bioRxiv: 10.1101/464230.
3. T. Sarkar, Roozbehani M., Dahleh M.A. "Minimal Realization Problems for Jump Linear Systems", to Appear in 57th IEEE Conference on Decision and Control (IEEE CDC), 2018.
4. B. Jiang, M. Roozbehani, M.A. Dahleh, "Coalitional game with opinion exchange", 56th IEEE Conference on Decision and Control (CDC 2017), to be submitted.
5. B. Jiang, R. Rigobon, M.A. Dahleh, "Contingent Linear Financial Networks" To be submitted.

PAPERS IN
REFEREED
JOURNALS

1. Ali Faghieh, M.A. Dahleh, "On Enhancing Resilience to Cascading Failures via Post-Disturbance Tweaking of Line Reactances", IEEE Transactions on Power Systems, pp 1-3, 2019, 10.1109/TPWRS.2019.2922288.
2. T. Sarkar, Dahleh M.A, Rakhlin A., "Finite-Time System Identification for Partially Observed LTI Systems of Unknown Order", Proceedings of Machine Learning Research, 2019.
3. T. Sarkar, M. Roozbehani, M.A. Dahleh, "Robustness Sensitivities in Large Networks", Emerging Applications of Control and Systems Theory, Springer International Publishing, 2018.
4. Adam, E.; Dahleh, M.A.; Ozdaglar, A. "Interconnection and Memory in Linear Time-Invariant Systems", IEEE Transactions on Automatic Control, to appear.
5. T. Sarkar, M. Roozbehani, M.A. Dahleh, "Asymptotic Network Robustness", IEEE Transactions on Control of Network Systems (TCNS), to appear.
6. Saxena S., Sarma S.V., Dahleh M.A., "Neural Limits in Tracking High Bandwidth Movements", Annual Meeting of the Society for the Neural Control of Movement, 2017.
7. Yazicioglu Y., Roozbehani M., Dahleh M.A., "Resilient Control of Transportation Networks by Using Variable Speed Limits", IEEE Transactions on Control of Network Systems, to appear.
8. Madjidian D., Roozbehani M., Dahleh M.A., "Energy Storage from Aggregate Deferrable Demand Fundamental Tradeoffs and Scheduling Policies", IEEE Transactions on Power Systems, to appear.
9. E. M. Adam, M. A. Dahleh and A. Ozdaglar, "Towards an algebra for cascade effects", Logical Methods in Computer Science, 13(3) pp 1-31, 2017.
10. Dahleh M.A.; Tahbaz-Salehi, A.; Tsitsiklis, J.N.; Zoumpoulis, S.I. "Coordination with Local Information", Operations Research, Vol. 64, No. 3, pp. 622-637, May-June 2016.
11. Huang, Q.; Ge, R.; Kakade, S.; Dahleh, M.A.; "Minimal Realization Problems for

- Hidden Markov Models”, IEEE Transactions in Signal Processing, Vol.64, No.7, April 2016.
12. Faghih R.T., Dahleh M.A., Adler G., Klerman E., and Brown E.N., “Quantifying Pituitary Adrenal Dynamics: Deconvolution of Concurrent Cortisol and Adrenocorticotrophic Hormone Data by Compressed Sensing,” IEEE Transactions on Biomedical Engineering, 62(10): 2379-2388, 2015
 13. Faghih R.T., Dahleh M.A., and Brown E.N., “An Optimization Formulation for Characterization of Pulsatile Cortisol Secretion,” Frontiers in Neuroscience, 9, 228, June 2015.
 14. Materassi, D; Dahleh, M.A.; Roozbehani, M.; Bolognani, S. “Optimal consumption policies for power-constrained flexible loads in energy markets”, IEEE Transactions on Smart Grid, Vol. 6, Issue: 4, p: 1884-1892, March 2015.
 15. Savla, K.; Dahleh, M.A.; Como, G. “Robust Networked Routing under Cascading Failures”, IEEE Transactions on Network Science and Engineering, Vol.1, No. 1, January 2015.
 16. Harsha, P , Dahleh, M.A. “Optimal Management and Sizing of Energy Storage under Dynamic Pricing for the Efficient Integration of Renewable Energy”, IEEE Transactions on Power Systems, Vol.30, No. 3, May 2015.
 17. Saxena S., Dahleh M. “Real-Time Decoding of an Integrate and Fire Encoder.” Advances in Neural Information Processing Systems (NIPS), 2014.
 18. Huang, Q., Roozbehani, M., Dahleh, M., “Efficient-Risk Tradeoffs in Electricity Markets with Dynamic Demand Response”, IEEE Transactions on Smart Grid, Vol. 6, Issue: 1, pp. 279-290, November 2014.
 19. Roozbehani, M.; Materassi D.; Ohannessian M.I.; Dahleh, M.A. “Robust and Optimal Consumption Policies for Deadline Constrained Deferrable Loads” IEEE Transactions, on Smart Grid, Vol. 5, Issue 4, pp. 1823–1834, July 2014
 20. Dahleh, M.A.; Tsitsiklis, J.N.; Zoumpoulis, S.I. “The Value of Temporal Data for Learning of Influence Networks”, Book chapter in Web and Internet Economics, Lecture Notes in Computer Science Volume 8877, pp. 322-323, Proceedings of the 10th Conference on Web and Internet Economics, 30% acceptance, 2014.
 21. Como, G.; Savla, K.; Acemoglu, D.; Dahleh, M.A. and Frazzoli, E. “Robust Distributed Routing in Dynamical Networks - Part I: Locally Responsive Policies and Weak Resilience”. IEEE Transactions on Automatic Control, Vol. 58, No. 2, pp. 317-332, February 2013.
 22. Como, G.; Savla, K.; Acemoglu, D.; Dahleh, M.A. and Frazzoli, E. “Robust Distributed Routing in Dynamical Networks - Part II: Strong Resilience, Equilibrium Selection and Cascaded Failures”. IEEE Transactions on Automatic Control, Vol. 58, No. 2, pp. 333-348, February 2013.
 23. Como, G.; Savla, K.; Acemoglu, D.; Dahleh, M.A. and Frazzoli, Stability Analysis of Transportation Networks with Multiple Driver Decisions, SIAM Journal on Control and Optimization, Vol. 51, pages 230-252, 2013.
 24. A. Faghih, M. Roozbehani, and M.A. Dahleh, “On the value and price-responsiveness of ramp-constrained storage,” Energy Conversion and Management, Vol. 76, pp. 472-482, December 2013
 25. Roozbehani, M.; Dahleh, M.A. and Mitter, S.K. “Volatility of Power Grids under Real-Time Pricing”. Power Systems, IEEE Transactions on, vol.27, no.4, pp.1926,1940, November 2012.
 26. Faghih, R.T.; Savla, K.; Dahleh, M.A.; Brown, E.N. “Broad Range of Neural Dynamics from a Time-Varying FitzHugh-Nagumo Model and Its Spiking Threshold Estimation,” IEEE Transactions on Biomedical Engineering, Vol. 59, No. 3, pages

- 816-823, March 2012
27. Tarraf, D.C.; Megretski, A. and Dahleh, M.A. "Finite approximations of switched homogeneous systems for controller synthesis". *Automatic Control, IEEE Transactions*, 56(5) 1140-1145, January, 2011.
 28. D. Acemoglu, M.A. Dahleh, I. Lobel and A. Ozdaglar, "Bayesian Learning in Social Networks". *Reviews of Economic Studies*, 78(4):1201-1236, March, 2011.
 29. Le Ny, J.L.; Feron, E. and Dahleh, M.A. "Scheduling Continuous-Time Kalman Filters". *Automatic Control, IEEE Transactions*, 56(6) 1381-1394 June 2011.
 30. M. Rinehart, M.A. Dahleh. "The Value of Side Information in Shortest Path Optimization". *IEEE Transactions on Automatic Control, IEEE Transactions*, vol.56, no.9, pp.2038-2049, Sept. 2011
 31. M.A. Dahleh, M. Rinehart. "Networked Control Systems". A chapter in "The Impact of Control Technology"; T. Samad and A.M. Annaswamy (eds.), 2011.
 32. O. Ayaso, D. Shah, and M.A. Dahleh. "Information Theoretic Bounds for Distributed Computation". *IEEE Trans. on Information Theory*, Vol. 56, Issue 12, Pg. 6020-6039, Dec. 2010.
 33. K. Santarelli and M.A. Dahleh. "Optimal controller synthesis for a class of LTI systems via switched feedback". *Systems and Control Letters*, Vol. 59, Issues 3-4, Pg. 258-264, April, 2010.
 34. S. Beheshi, and M.A. Dahleh, "Noisy Data and Impulse Response Estimation". *IEEE Transactions on Signal Processing*, 58(2) 510-521, 2010.
 35. Sarma, S.V. and Dahleh, M.A (2010) "Signal Reconstruction in the Presence of Finite-Rate Measurements: Finite-horizon Control Applications". *International Journal of Robust and Nonlinear Control* (early view) 20: 41-58, 2010.
 36. Rinehart, M.; Dahleh, M.A. (2009) and Kolmanovsky, I. "Value Iteration for (Switched) Homogeneous Systems". *IEEE Transactions on Automatic Control*, 54(6) 1290-1294 June.
 37. Santarelli, K.R. and Dahleh, M.A. (2009) "L2 gain stability of switched output feedback controllers for a class of LTI systems". "IEEE Transactions on Automatic Control, 54(7) 1504-1514, July.
 38. Santarelli, K.R. and Dahleh, M.A (2009) "Comparison between a switching controller and two LTI controllers for a class of LTI plants". *International Journal of Robust and Nonlinear Control*, 19(2) 185-217, January.
 39. Martins, N.C. and Dahleh, M.A. (2008) "Feedback Control in the Presence of Noisy Channels: Bode-Like Fundamental Limitations of Performance". *IEEE Transactions on Automatic Control*, 53(7) 1604-1615 August.
 40. Rinehart, M. Dahleh, M.A.; Reed, D. and Kolmanovsky, I. (2008) "Suboptimal Control of Switched Systems with an Application to the DISC Engine". *IEEE Transaction on Control Systems Technology*, 16(2) 189-201, March.
 41. Santarelli, K.; Megretski, A. and Dahleh, M.A. (2008) "Stabilizability of two-dimensional linear systems via switched output feedback". *Systems and Control Letters*, 57(3) 228-235.
 42. Sarma, S.V.; Dahleh, M.A. and Salapaka, S. (2008) "On Time-Varying Bit-Allocation Maintaining Stability and Performance: A Convex Parameterization". *IEEE Transactions on Automatic Control*, 53(5) 1147-1159 June.
 43. Tarraf, D.C.; Megretski, A. and Dahleh, M.A. (2008) "A Framework for Robust Stability of Systems Over Finite Alphabets". *Automatic Control, IEEE Transactions on Automatic Control*, 53(5) 1133-1146 June.
 44. Waisanen, H.A.; Shah, D. and Dahleh, M.A. (2008) "A Dynamic Pickup and

- Delivery Problem in Mobile Networks Under Information Constraints”. IEEE Transactions on Automatic Control, 53(6) 1419-1433 July.
45. Martins, N.C.; Dahleh, M.A. and Doyle, J.C. (2007) “Fundamental Limitations of Disturbance Attenuation in the Presence of Side Information”. IEEE Transactions on Automatic Control, 52(1) 56-66 January.
 46. Sarma, S.V. and Dahleh, M.A. (2007) “Remote Control Over Noisy Communication Channels: A First-Order Example”. Technical Notes and Correspondence, IEEE Transactions on Automatic Control, 52(2) 284-289.
 47. Karameh, F.; Dahleh, M.A.; Brown, E. and Massaquoi, S. (2006) “Modeling the contribution of lamina 5 neuronal and network dynamics to low frequency EEG phenomena”. Biological Cybernetics, 95(4) 289-310, October.
 48. Kotsalis, G.; Megretski, A. and Dahleh, M.A. (2006) “Model Reduction of Discrete-Time Markov Jump linear systems”. IEEE Transactions on Automatic Control, 95(4) 3424-3429.
 49. Martins, N.C.; Dahleh, M.A. and Elia, N. (2006) “Feedback Stabilization of Uncertain Systems in the Presence of a Stochastic Digital Link”. IEEE Transactions on Automatic Control, 51(3) 438-447.
 50. Behesti, S. and Dahleh, M.A. (2005) “A New Information Theoretic Approach to Signal Denoising and Best Basis Selection”. IEEE Transactions on Robotics, 53(10) 3613-3624.
 51. Frazzoli, E.; Dahleh, M.A. and Feron, E. (2005) “Maneuver-based motion planning for nonlinear systems with symmetries”. IEEE Transactions on Robotics, 21(6) 1077-1091.
 52. Frazzoli, E.; Dahleh, M.A. and Feron, E. (2003) “A Maneuver-Based Hybrid Control Architecture for Autonomous Vehicle Motion Planning”. In G. Balas and T. Samad (Eds), Software Enabled Control: Information Technology for Dynamical Systems (15) 299-323.
 53. Goncalves, J.M.; Megretski, A. and Dahleh, M.A. (2003) “Global analysis of piecewise linear systems using impact maps and quadratic surface Lyapunov functions”. IEEE Transactions on Automatic Control, 48(12) 2089-2106.
 54. Bamieh, B.; Paganini, F. and Dahleh, M.A. “Distributed Control of Spatially Invariant Systems”. IEEE Transactions on Automatic Control, 47(7) 1091-1107 July.
 55. Frazzoli, F.; Dahleh, M.A. and Feron, E. “Real-Time Motion Planning for Agile Autonomous Vehicles”. AIAA Journal of Guidance, Control and Dynamics, 25(1) 116-129 July.
 56. Goncalves, J.; Megretski, A. and Dahleh, M.A. “Global Analysis of Piecewise Linear Systems Using Impact Maps and Quadratic Surface Lyapunov Functions”. IEEE Transactions on Automatic Control, 48(12) 2089-2106 December.
 57. Gavrillets, V.; Shterenberg, A.; Martinos, I.; Sprague, K.; Dahleh, M.A. and Feron, E. “Avionics System for Aggressive Maneuvers”. IEEE AESS Systems Magazine, 16(9) 38-43 September.
 58. Goncalves, J.; Megretski, A. and Dahleh, M.A. “Global Stability of Relay Feedback Systems”. IEEE Transactions on Automatic Control, 46(4) 550-562 April.
 59. Venkatesh, S. and Dahleh, M.A. “On System-Identification of Complex-Systems with Finite Date”. IEEE Transactions on Automatic Control, 46(2) 235-257 February 2001.
 60. Venkatesh, S.; Megretski, A. and Dahleh, M.A. “Robust Control and Analysis on a Hilbert Space”. Systems and Control Letters, 39: 1-12 January.
 61. N. Elia, and M. A. Dahleh, “Computational Methods for Controller Design”. Lecture notes in Information Sciences Series, Springer Ver-Lag, 1998.

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for Continuous-Time Systems". IEEE Trans. Automat. Contr., Vol AC-32, pp. 889-895, October 1987.

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STUDENTS**

<u>Name</u>	<u>Title of Thesis</u>	<u>Current Affiliation</u>
Elie, Adam	Systems, Generativity and Interactional Effects	MIT
Ayaso, Ola	Information Theoretic Bounds for Distributed Computation	Postdoc, Georgia Tech
Beheshti, Soosan	On Model Quality Evaluation of Stable LTI Systems	Ryerson University
Boussios, Constantinos	An Approach for Nonlinear Control Design via Approximate Dynamic Programming	Open Rating
Baldan, Giancarlo	Low Complexity Quantized Controllers for LTI Systems: peak-to-peak Performance Guarantees	nuTonomy
Diaz-Bobillo, Ignacio	The General Optimal Multiblock Problem: Exact and Appropriate Solutions	IAE/Austral University
Elia, Nicola	Computational Methods for Multi-Objective Control	University of Minnesota
Frazzoli, Emilio	Robust Hybrid Control for Autonomous Vehicle Motion Planning	ETH
Faghih, Rose	System Identification of Cortisol Secretion: Characterizing Pulsatile Dynamics	University of Houston
Faghih, Ali	On Control and Optimization of Cascading Phenomena in a Class of Dynamic Networks	Loomis, Sayles & Company, L.P.
Gavrilets, Vladislav	Autonomous Aerobatic Maneuvering of Miniature Helicopters	Aurora
Goncalves, Jorge M.	Constructive Global Analysis of Hybrid Systems	University of Cambridge
Itani, Sleiman M.	Dynamic Systems and Subadditive Functions	Atheer, CEO
Katsargyri, Georgia-Evangel	Individual and Systemic Risk Trade-offs Induced by Information Barriers in the Financial System	Thinknear by Telenav
Karamah, Fadi N.	Biophysically Justifiable Mathematical Models of Brain Electric Activity: Origins of the Electroencephalogram	American University of Beirut
Kotsalis, Georgios	Model reduction for Hidden Markov Models	Postdoc, Georgia Tech
Le Ny, Jerome	Performance Optimization for Unmanned Vehicle Systems	École Polytechnique de Montreal
Livstone, Mitchell M.	Identification, Robust Adaptation and Iterative Schemes	Fidelity Investments
Lobel, Iland	Social Networks: Rational Learning and Information Aggregation	NYU
Martins, Nuno C.	Information Theoretic Aspects of the Mode Estimation and Control of Stochastic Systems	Univ. of Maryland
Massaquoi,	Modeling the Function of the Cerebellum in	Massachusetts

Steve G.	Scheduled Linear Servo Control of Simple Horizontal Planar Arm Movements	General Hospital
McConley, Marc	A Computationally Efficient Lyapunov-Based Procedure For Control Of Nonlinear Systems With Stability And Performance Guarantees	Draper Labs
Ohannessian, Mesrob	On Inference about Rare Events	Toyota Technological Institute
Rinehart, Michael D.	The Value Of Information In Shortest Path Optimization	BAE
Rodriguez, Armando A.	Control of Infinite Dimensional Systems Using Finite Dimensional Techniques: A Systematic Approach	Arizona State University
Rovira, Feijer Diego	Financial Market Failures and Systemic Crises	Facebook
Santarelli, Keith R.	On the Synthesis of Switched Output Feedback Controllers for Linear, Time-Invariant Systems.	BBN
Shreya Saxena	Moving Fast: Neural Constraints in Closed Loop	Columbia University
Sarma, Sridevi V.	Finite-Rate Control: Stability and Performance	Johns Hopkins University
Saligrama, Venkatesh	System-identification for Complex Systems	Boston University
Spyros Zoumpoulis	How Networked Agents Make Decisions: Coordination with Local Information and the Value of Temporal Data for Learning in Networks	INSEAD
Tarraf, Danielle	A Finite State Machine Framework for Robust Analysis and Control of Hybrid Systems	Johns Hopkins Univ. RAND
Valavanis, Stavros	Investment Deviation from Fundamentals and Systemic Risk	Deutch Bank, NY
Voulgaris, Petros	Analysis and Synthesis of Controllers for the Classes of Slowly Varying, Periodic, and Multirate Systems	Univ. of Illinois, Urbana-Champaign
Waisanen-Hatipoglu, Holly	Control of Mobile Networks Using Dynamic Vehicle Routing	American Airlines
Warnick, Sean C.	Ellipsometry-Based Feedback Control of Epitaxial Processes	Brigham Young University

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