



Stephen Boyd

Samsung Professor in the School of Engineering and Professor, by courtesy, of Computer Science and of Management Science and Engineering
Electrical Engineering

CONTACT INFORMATION

- **Faculty Administrator**

Doug Chaffee

Email dchaffee@ee.stanford.edu

Tel 650-721-2892

Bio

BIO

Stephen P. Boyd is the Samsung Professor of Engineering, and Professor of Electrical Engineering in the Information Systems Laboratory at Stanford University. He has courtesy appointments in the Department of Management Science and Engineering and the Department of Computer Science, and is member of the Institute for Computational and Mathematical Engineering. His current research focus is on convex optimization applications in control, signal processing, machine learning, and finance.

Professor Boyd received an AB degree in Mathematics, summa cum laude, from Harvard University in 1980, and a PhD in EECS from U. C. Berkeley in 1985. In 1985 he joined the faculty of Stanford's Electrical Engineering Department. He has held visiting Professor positions at Katholieke University (Leuven), McGill University (Montreal), Ecole Polytechnique Federale (Lausanne), Tsinghua University (Beijing), Universite Paul Sabatier (Toulouse), Royal Institute of Technology (Stockholm), Kyoto University, Harbin Institute of Technology, NYU, MIT, UC Berkeley, CUHK-Shenzhen, and IMT Lucca. He holds honorary doctorates from Royal Institute of Technology (KTH), Stockholm, and Catholic University of Louvain (UCL).

Professor Boyd is the author of many research articles and four books: Introduction to Applied Linear Algebra: Vectors, Matrices, and Least-Squares (with Lieven Vandenberghe, 2018), Convex Optimization (with Lieven Vandenberghe, 2004), Linear Matrix Inequalities in System and Control Theory (with L. El Ghaoui, E. Feron, and V. Balakrishnan, 1994), and Linear Controller Design: Limits of Performance (with Craig Barratt, 1991). His group has produced many open source tools, including CVX (with Michael Grant), CVXPY (with Steven Diamond) and Convex.jl (with Madeleine Udell and others), widely used parser-solvers for convex optimization.

Professor Boyd has received many awards and honors for his research in control systems engineering and optimization, including an ONR Young Investigator Award, a Presidential Young Investigator Award, and the AACC Donald P. Eckman Award. In 2013, he received the IEEE Control Systems Award, given for outstanding contributions to control systems engineering, science, or technology. In 2012, Michael Grant and he were given the Mathematical Optimization Society's Beale-Orchard-Hays Award, given every three years for excellence in computational mathematical programming. He is a Fellow of the IEEE, SIAM, and INFORMS, a Distinguished Lecturer of the IEEE Control Systems Society, and a member of the US National Academy of Engineering and a foreign member of the Chinese

Academy of Engineering. He has been invited to deliver more than 90 plenary and keynote lectures at major conferences in control, optimization, signal processing, and machine learning.

He has developed and taught many undergraduate and graduate courses, including Signals & Systems, Linear Dynamical Systems, Convex Optimization, and a recent undergraduate course on Matrix Methods. His graduate convex optimization course attracts around 300 students from more than 20 departments. In 1991 he received an ASSU Graduate Teaching Award, and in 1994 he received the Perrin Award for Outstanding Undergraduate Teaching in the School of Engineering. In 2003, he received the AACC Ragazzini Education award, for contributions to control education, with citation: "For excellence in classroom teaching, textbook and monograph preparation, and undergraduate and graduate mentoring of students in the area of systems, control, and optimization." In 2016 he received the Walter J. Gores award, the highest award for teaching at Stanford University. In 2017 he received the IEEE James H. Mulligan, Jr. Education Medal, for a career of outstanding contributions to education in the fields of interest of IEEE, with citation "For inspirational education of students and researchers in the theory and application of optimization."

ACADEMIC APPOINTMENTS

- Professor, Electrical Engineering
- Professor (By courtesy), Computer Science
- Member, Bio-X
- Affiliate, Precourt Institute for Energy

ADMINISTRATIVE APPOINTMENTS

- Chair, Department of Electrical Engineering, (2018- present)

HONORS AND AWARDS

- Athanasios Papoulis Society Award, European Association for Signal Processing (EURASIP) (2019)
- Foreign member, Chinese Academy of Engineering (2017)
- Honorary PhD, University Catholique de Louvain (2017)
- James H. Mulligan, Jr. Education Medal, IEEE (2017)
- Fellow, INFORMS (2016)
- Walter J. Gores teaching award, Stanford (2016)
- Fellow, SIAM (2015)
- Member, National Academy of Engineering (2014)
- Saul Gass Award, INFORMS (2014)
- Control Systems Award, IEEE (2013)
- Beal-Orchard-Hays Prize, Mathematical Optimization Society (2012)
- Honorary PhD, Royal Institute of Technology (KTH), Stockholm (2006)
- John R. Ragazzini Award, Automatic Control Council (2003)
- Fellow, IEEE Control Systems Society (1999)
- Hugo Schuck Award, IEEE Control Systems Society (1999)
- Perrin Award for Undergraduate Teaching, Stanford University (1994)
- Distinguished Lecturer, IEEE (1993)
- Donald P. Eckman Award, IEEE Control Systems Society (1992)
- Graduate Teaching Award, ASSU (1991)
- Presidential Young Investigator Award, National Science Foundation (1986)

PROGRAM AFFILIATIONS

- Institute for Computational and Mathematical Engineering (ICME)

PROFESSIONAL EDUCATION

- PhD, UC Berkeley , EECS (1985)
- BA, Harvard University , Mathematics (1980)

LINKS

- Research web page: <http://www.stanford.edu/~boyd>
- Google scholar: <https://scholar.google.com/citations?user=GExyiRkAAAAJ&hl=en>

Teaching

COURSES

2018-19

- Convex Optimization I: CME 364A, CS 334A, EE 364A (Win)

2017-18

- Introduction to Machine Learning: EE 104 (Spr)
- Introduction to Matrix Methods: CME 103, EE 103 (Aut)

2016-17

- Convex Optimization I: CME 364A, CS 334A, EE 364A (Spr)
- Introduction to Matrix Methods: CME 103, EE 103 (Aut)

2015-16

- Convex Optimization I: CME 364A, CS 334A, EE 364A (Win)
- Introduction to Matrix Methods: CME 103, EE 103 (Aut)

Publications

PUBLICATIONS

- **A Distributed Method for Optimal Capacity Reservation** *JOURNAL OF OPTIMIZATION THEORY AND APPLICATIONS*
Moehle, N., Shen, X., Luo, Z., Boyd, S.
2019; 182 (3): 1130–49
- **Greedy Gaussian segmentation of multivariate time series** *ADVANCES IN DATA ANALYSIS AND CLASSIFICATION*
Hallac, D., Nystrup, P., Boyd, S.
2019; 13 (3): 727–51
- **Disciplined geometric programming** *OPTIMIZATION LETTERS*
Agrawal, A., Diamond, S., Boyd, S.
2019; 13 (5): 961–76
- **Real-Time Radiation Treatment Planning with Optimality Guarantees via Cluster and Bound Methods** *INFORMS JOURNAL ON COMPUTING*
Ungun, B., Xing, L., Boyd, S.
2019; 31 (3): 544–58
- **Computational Bounds for Photonic Design** *ACS PHOTONICS*
Angeris, G., Vuckovic, J., Boyd, S. P.
2019; 6 (5): 1232–39

- **Quantitative flux coupling analysis** *JOURNAL OF MATHEMATICAL BIOLOGY*
Tefagh, M., Boyd, S. P.
2019; 78 (5): 1459–84
- **A convex optimization approach to radiation treatment planning with dose constraints** *OPTIMIZATION AND ENGINEERING*
Fu, A., Ungun, B., Xing, L., Boyd, S.
2019; 20 (1): 277–300
- **Distributed Majorization-Minimization for Laplacian Regularized Problems** *IEEE-CAA JOURNAL OF AUTOMATICA SINICA*
Tuck, J., Hallac, D., Boyd, S.
2019; 6 (1): 45–52
- **Quantitative flux coupling analysis.** *Journal of mathematical biology*
Tefagh, M., Boyd, S. P.
2018
- **Fitting jump models** *AUTOMATICA*
Bemporad, A., Breschi, V., Piga, D., Boyd, S. P.
2018; 96: 11–21
- **End-to-end Optimization of Optics and Image Processing for Achromatic Extended Depth of Field and Super-resolution Imaging** *ACM TRANSACTIONS ON GRAPHICS*
Sitzmann, V., Diamond, S., Peng, Y., Dun, X., Boyd, S., Heidrich, W., Heide, F., Wetzstein, G.
2018; 37 (4)
- **A semidefinite programming method for integer convex quadratic minimization** *OPTIMIZATION LETTERS*
Park, J., Boyd, S.
2018; 12 (3): 499–518
- **Saturating Splines and Feature Selection** *JOURNAL OF MACHINE LEARNING RESEARCH*
Boyd, N., Hastie, T., Boyd, S., Recht, B., Jordan, M.
2018; 18
- **Prediction error methods in learning jump ARMAX models**
Breschi, V., Bemporad, A., Piga, D., Boyd, S., IEEE
IEEE.2018: 2247–52
- **Infeasibility Detection in the Alternating Direction Method of Multipliers for Convex Optimization**
Banjac, G., Goulart, P., Stellato, B., Boyd, S., IEEE
IEEE.2018: 340
- **OSQP: An Operator Splitting Solver for Quadratic Programs**
Stellato, B., Banjac, G., Goulart, P., Bemporad, A., Boyd, S., IEEE
IEEE.2018: 339
- **Introduction to Applied Linear Algebra – Vectors, Matrices, and Least Squares**
Boyd, S., Vandenberghe, L.
Cambridge University Press.2018
- **Saturating Splines and Feature Selection.** *Journal of machine learning research : JMLR*
Boyd, N., Hastie, T., Boyd, S., Recht, B., Jordan, M. I.
2018; 18
- **Embedded Mixed-Integer Quadratic Optimization Using the OSQP Solver**
Stellato, B., Naik, V. V., Bemporad, A., Goulart, P., Boyd, S., IEEE
IEEE.2018: 1536–41
- **Network Inference via the Time-Varying Graphical Lasso.** *KDD : proceedings. International Conference on Knowledge Discovery & Data Mining*
Hallac, D., Park, Y., Boyd, S., Leskovec, J.
2017; 2017: 205–13

- **Toeplitz Inverse Covariance-Based Clustering of Multivariate Time Series Data.** *KDD : proceedings. International Conference on Knowledge Discovery & Data Mining*
Hallac, D., Vare, S., Boyd, S., Leskovec, J.
2017; 2017: 215–23
- **Stochastic Matrix-Free Equilibration** *JOURNAL OF OPTIMIZATION THEORY AND APPLICATIONS*
Diamond, S., Boyd, S.
2017; 172 (2): 436-454
- **Linear Convergence and Metric Selection for Douglas-Rachford Splitting and ADMM** *IEEE TRANSACTIONS ON AUTOMATIC CONTROL*
Giselsson, P., Boyd, S.
2017; 62 (2): 532-544
- **SnapVX: A Network-Based Convex Optimization Solver** *JOURNAL OF MACHINE LEARNING RESEARCH*
Hallac, D., Wong, C., Diamond, S., Sharang, A., Susic, R., Boyd, S., Leskovec, J.
2017; 18
- **Stochastic Mirror Descent in Variationally Coherent Optimization Problems**
Zhou, Z., Mertikopoulos, P., Bambos, N., Boyd, S., Glynn, P., Guyon, Luxburg, U. V., Bengio, S., Wallach, H., Fergus, R., Vishwanathan, S., Garnett, R.
NEURAL INFORMATION PROCESSING SYSTEMS (NIPS).2017
- **Learning the Network Structure of Heterogeneous Data via Pairwise Exponential Markov Random Fields.** *Proceedings of machine learning research*
Park, Y., Hallac, D., Boyd, S., Leskovec, J.
2017; 54: 1302–10
- **Disciplined Multi-Convex Programming**
Shen, X., Diamond, S., Udell, M., Gu, Y., Boyd, S., IEEE
IEEE.2017: 895–900
- **Dynamic Energy Management with Scenario-Based Robust MPC**
Wytock, M., Moehle, N., Boyd, S., IEEE
IEEE.2017: 2042–47
- **Embedded Code Generation Using the OSQP Solver**
Banjac, G., Stellato, B., Moehle, N., Goulart, P., Bemporad, A., Boyd, S., IEEE
IEEE.2017
- **SnapVX: A Network-Based Convex Optimization Solver.** *Journal of machine learning research : JMLR*
Hallac, D., Wong, C., Diamond, S., Sharang, A., Susic, R., Boyd, S., Leskovec, J.
2017; 18 (1): 110–14
- **Antagonistic control** *SYSTEMS & CONTROL LETTERS*
Lipp, T., Boyd, S.
2016; 98: 44-48
- **Optimization of rotational arc station parameter optimized radiation therapy.** *Medical physics*
Dong, P., Ungun, B., Boyd, S., Xing, L.
2016; 43 (9): 4973-?
- **Variations and extension of the convex-concave procedure** *OPTIMIZATION AND ENGINEERING*
Lipp, T., Boyd, S.
2016; 17 (2): 263-287
- **Conic Optimization via Operator Splitting and Homogeneous Self-Dual Embedding** *JOURNAL OF OPTIMIZATION THEORY AND APPLICATIONS*
O'Donoghue, B., Chu, E., Parikh, N., Boyd, S.
2016; 169 (3): 1042-1068
- **Bounding duality gap for separable problems with linear constraints** *COMPUTATIONAL OPTIMIZATION AND APPLICATIONS*
Udell, M., Boyd, S.
2016; 64 (2): 355-378

- **MIMO PID tuning via iterated LMI restriction** *INTERNATIONAL JOURNAL OF ROBUST AND NONLINEAR CONTROL*
Boyd, S., Hast, M., Astrom, K. J.
2016; 26 (8): 1718-1731
- **CVXPY: A Python-Embedded Modeling Language for Convex Optimization.** *Journal of machine learning research : JMLR*
Diamond, S., Boyd, S.
2016; 17
- **A PRIMER ON MONOTONE OPERATOR METHODS SURVEY** *APPLIED AND COMPUTATIONAL MATHEMATICS*
Ryu, E. K., Boyd, S.
2016; 15 (1): 3-43
- **A Differential Equation for Modeling Nesterov's Accelerated Gradient Method: Theory and Insights** *JOURNAL OF MACHINE LEARNING RESEARCH*
Su, W., Boyd, S., Candes, E. J.
2016; 17
- **Metric selection in fast dual forward-backward splitting** *AUTOMATICA*
Giselsson, P., Boyd, S.
2015; 62: 1-10
- **A perspective-based convex relaxation for switched-affine optimal control** *SYSTEMS & CONTROL LETTERS*
Moehle, N., Boyd, S.
2015; 86: 34-40
- **Extensions of Gauss Quadrature Via Linear Programming** *FOUNDATIONS OF COMPUTATIONAL MATHEMATICS*
Ryu, E. K., Boyd, S. P.
2015; 15 (4): 953-971
- **Network Lasso: Clustering and Optimization in Large Graphs.** *KDD : proceedings. International Conference on Knowledge Discovery & Data Mining*
Hallac, D., Leskovec, J., Boyd, S.
2015; 2015: 387-396
- **Approximate dynamic programming via iterated Bellman inequalities** *INTERNATIONAL JOURNAL OF ROBUST AND NONLINEAR CONTROL*
Wang, Y., O'Donoghue, B., Boyd, S.
2015; 25 (10): 1472-1496
- **Optimal current waveforms for brushless permanent magnet motors** *INTERNATIONAL JOURNAL OF CONTROL*
Moehle, N., Boyd, S.
2015; 88 (7): 1389-1399
- **Model predictive control for wind power gradients** *WIND ENERGY*
Hovgaard, T. G., Boyd, S., Jorgensen, J. B.
2015; 18 (6): 991-1006
- **TH-AB-BRB-02: Enabling Web-Based Treatment Planning Using a State-Of-The-Art Convex Optimization Solver.** *Medical physics*
Ungun, B., Folkerts, M., Bush, K., Boyd, S., Xing, L.
2015; 42 (6): 3704-?
- **Linear Models Based on Noisy Data and the Frisch Scheme** *SIAM REVIEW*
Ning, L., Georgiou, T. T., Tannenbaum, A., Boyd, S. P.
2015; 57 (2): 167-197
- **Linear Models Based on Noisy Data and the Frisch Scheme.** *SIAM review. Society for Industrial and Applied Mathematics*
Ning, L., Georgiou, T. T., Tannenbaum, A., Boyd, S. P.
2015; 57 (2): 167-97
- **Minimum-time speed optimisation over a fixed path** *INTERNATIONAL JOURNAL OF CONTROL*
Lipp, T., Boyd, S.
2014; 87 (6): 1297-1311

- **Quadratic approximate dynamic programming for input-affine systems** *INTERNATIONAL JOURNAL OF ROBUST AND NONLINEAR CONTROL*
Keshavarz, A., Boyd, S.
2014; 24 (3): 432-449
- **Dynamic network energy management via proximal message passing** *Foundations and Trends in Optimization, Original version posted 4/1/12.*
Kraning, M., Chu, E., Lavaei, J., Boyd, S.
2014; 2 (1): 70-122
- **Security Constrained Optimal Power Flow via Proximal Message Passing** *Clemson-University Power Systems Conference (PSC)*
Chakrabarti, S., Kraning, M., Chu, E., Baldick, R., Boyd, S.
IEEE.2014
- **Proximal algorithms** *Foundations and Trends in Optimization*
Boyd, S., Parikh, N.
2014; 3 (1): 123-231
- **Performance bounds and suboptimal policies for multi-period investment** *Foundations and Trends in Optimization, Original version*
Boyd, S., Mueller, M., O'Donoghue, B., Wang, Y.
2014; 1 (1): 1-69
- **A Splitting Method for Optimal Control** *IEEE TRANSACTIONS ON CONTROL SYSTEMS TECHNOLOGY*
O'Donoghue, B., Stathopoulos, G., Boyd, S.
2013; 21 (6): 2432-2442
- **Nonconvex model predictive control for commercial refrigeration** *INTERNATIONAL JOURNAL OF CONTROL*
Hovgaard, T. G., Boyd, S., Larsen, L. F., Jorgensen, J. B.
2013; 86 (8): 1349-1366
- **Risk group detection and survival function estimation for interval coded survival methods** *NEUROCOMPUTING*
Van Belle, V., Neven, P., Harvey, V., Van Huffel, S., Suykens, J. A., Boyd, S.
2013; 112: 200-210
- **A distributed algorithm for fitting generalized additive models** *OPTIMIZATION AND ENGINEERING*
Chu, E., Keshavarz, A., Boyd, S.
2013; 14 (2): 213-224
- **A primal-dual operator splitting method for conic optimization** *Working Draft.*
Chu, E., O'Donoghue, B., Parikh, N., Boyd, S.
2013
- **Code Generation for Embedded Second-Order Cone Programming** *European Control Conference (ECC)*
Chu, E., Parikh, N., Domahidi, A., Boyd, S.
IEEE.2013: 1547-1552
- **Cost Optimal Operation of Thermal Energy Storage System with Real-Time Prices** *2nd International Conference on Control, Automation and Information Sciences (ICCAIS)*
Kashima, T., Boyd, S. P.
IEEE.2013
- **PID Design by Convex-Concave Optimization** *European Control Conference (ECC)*
Hast, M., Astrom, K. J., Bernhardsson, B., Boyd, S.
IEEE.2013: 4460-4465
- **ECOS: An SOCP Solver for Embedded Systems** *European Control Conference (ECC)*
Domahidi, A., Chu, E., Boyd, S.
IEEE.2013: 3077-3082
- **ECOS: An SOCP solver for embedded systems**
Domahidi, A., Chu, E., Boyd, S.
2013

- **Cost optimal operation of thermal energy storage system with real-time prices**
Kashima, T., Boyd, S.
2013
- **Code generation for embedded second-order cone programming**
Chu, E., Parikh, N., Domahidi, A., Boyd, S.
2013
- **Iterated approximate value functions**
O'Donoghue, B., Wang, Y., Boyd, S.
2013
- **MPC for Wind Power Gradients - Utilizing Forecasts, Rotor Inertia, and Central Energy Storage** *European Control Conference (ECC)*
Hovgaard, T. G., Larsen, L. F., Jorgensen, J. B., Boyd, S.
IEEE.2013: 4071–4076
- **Model predictive control for wind power gradients**
Hovgaard, T., Boyd, S., Jørgensen, J.
2013
- **Block splitting for distributed optimization** *Mathematical Programming Computation, Shorter preliminary version appeared as NIPS workshop paper.*
Parikh, N., Boyd, S.
2013
- **PID design by convex-concave optimization**
Hast, M., Astrom, K., Bernhardsson, B., Boyd, S.
2013
- **Robust optimization of adiabatic tapers for coupling to slow-light photonic-crystal waveguides** *OPTICS EXPRESS*
Oskooi, A., Mutapcic, A., Noda, S., Joannopoulos, J. D., Boyd, S. P., Johnson, S. G.
2012; 20 (19): 21558-21575
- **Dose optimization with first-order total-variation minimization for dense angularly sampled and sparse intensity modulated radiation therapy (DASSIM-RT)** *MEDICAL PHYSICS*
Kim, H., Li, R., Lee, R., Goldstein, T., Boyd, S., Candes, E., Xing, L.
2012; 39 (7): 4316-4327
- **Smoothed state estimates under abrupt changes using sum-of-norms regularization** *AUTOMATICA*
Ohlsson, H., Gustafsson, F., Ljung, L., Boyd, S.
2012; 48 (4): 595-605
- **A Mathematical Model for Interpretable Clinical Decision Support with Applications in Gynecology** *PLOS ONE*
Van Belle, V. M., Van Calster, B., Timmerman, D., Bourne, T., Bottomley, C., Valentin, L., Neven, P., Van Huffel, S., Suykens, J. A., Boyd, S.
2012; 7 (3)
- **CVXGEN: a code generator for embedded convex optimization** *OPTIMIZATION AND ENGINEERING*
Mattingley, J., Boyd, S.
2012; 13 (1): 1-27
- **Moving Horizon Estimation for Staged QP Problems** *51st IEEE Annual Conference on Decision and Control (CDC)*
Chu, E., Keshavarz, A., Gorinevsky, D., Boyd, S.
IEEE.2012: 3177–3182
- **Accuracy at the top**
Boyd, S., Cortes, C., Mohri, M., Radovanovic, A.
2012
- **Quadratic approximate dynamic programming for input-affine systems** *International Journal of Robust and Nonlinear Control, published on-line*
Keshavarz, A., Boyd, S.
2012

- **An ADMM algorithm for a class of total variation regularized estimation problems**
Wahlberg, B., Boyd, S., Annergren, M., Wang, Y.
2012
- **Performance bounds and suboptimal policies for linear stochastic control via LMIs** *INTERNATIONAL JOURNAL OF ROBUST AND NONLINEAR CONTROL*
Wang, Y., Boyd, S.
2011; 21 (14): 1710-1728
- **Fast Evaluation of Quadratic Control-Lyapunov Policy** *IEEE TRANSACTIONS ON CONTROL SYSTEMS TECHNOLOGY*
Wang, Y., Boyd, S.
2011; 19 (4): 939-946
- **Receding Horizon Control AUTOMATIC GENERATION OF HIGH-SPEED SOLVERS** *IEEE CONTROL SYSTEMS MAGAZINE*
Mattingley, J., Wang, Y., Boyd, S.
2011; 31 (3): 52-65
- **Inferring stable genetic networks from steady-state data** *AUTOMATICA*
Zavlanos, M. M., Julius, A. A., Boyd, S. P., Pappas, G. J.
2011; 47 (6): 1113-1122
- **Inverse design of a three-dimensional nanophotonic resonator** *OPTICS EXPRESS*
Lu, J., Boyd, S., Vuckovic, J.
2011; 19 (11): 10563-10570
- **Self-Tuning for Maximized Lifetime Energy-Efficiency in the Presence of Circuit Aging** *IEEE TRANSACTIONS ON COMPUTER-AIDED DESIGN OF INTEGRATED CIRCUITS AND SYSTEMS*
Mintarno, E., Skaf, J., Zheng, R., Velamala, J. B., Cao, Y., Boyd, S., Dutton, R. W., Mitra, S.
2011; 30 (5): 760-773
- **Controller coefficient truncation using Lyapunov performance certificate** *INTERNATIONAL JOURNAL OF ROBUST AND NONLINEAR CONTROL*
Skaf, J., Boyd, S. P.
2011; 21 (1): 55-78
- **Imputing a Convex Objective Function** *IEEE International Symposium on Intelligent Control (ISIC)/IEEE Multi-Conference on Systems and Control (MSC)*
Keshavarz, A., Wang, Y., Boyd, S.
IEEE.2011: 613-619
- **Load Reduction of Wind Turbines Using Receding Horizon Control** *IEEE International Conference on Control Applications (CCA)*
Soltani, M., Wisniewski, R., Brath, P., Boyd, S.
IEEE.2011: 852-857
- **Min-max approximate dynamic programming**
O'Donoghue, B., Wang, Y., Boyd, S.
2011
- **Scalable statistical monitoring of fleet data**
Chu, E., Gorinevsky, D., Boyd, S.
2011
- **Operation and configuration of a storage portfolio via convex optimization**
Kraning, M., Wang, Y., Akuiyibo, E., Boyd, S.
2011
- **Block splitting for large-scale distributed learning**
Parikh, N., Boyd, S.
2011
- **Receding horizon control: Automatic generation of high-speed solvers** *IEEE Control Systems Magazine*
Mattingley, J., Wang, Y., Boyd, S.

2011; 3 (31): 52–65

- **Distributed optimization and statistical learning via the alternating direction method of multipliers** *Foundations and Trends in Machine Learning*
Boyd, S., Parikh, N., Chu, E., Peleato, B., Eckstein, J.
2011; 1 (3): 1–122
- **Load reduction of wind turbines using receding horizon control**
Soltani, M., Wisniewski, R., Brath, P., Boyd, S.
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- **Wind Turbine Pitch Optimization** *IEEE International Conference on Control Applications (CCA)*
Biegel, B., Juelsgaard, M., Kraning, M., Boyd, S., Stoustrup, J.
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- **Shrinking-horizon dynamic programming** *INTERNATIONAL JOURNAL OF ROBUST AND NONLINEAR CONTROL*
Skaf, J., Boyd, S., Zeevi, A.
2010; 20 (17): 1993-2002
- **A unified framework for 3D radiation therapy and IMRT planning: plan optimization in the beamlet domain by constraining or regularizing the fluence map variations** *PHYSICS IN MEDICINE AND BIOLOGY*
Meng, B., Zhu, L., Widrow, B., Boyd, S., Xing, L.
2010; 55 (22): N521-N531
- **Design of Affine Controllers via Convex Optimization** *IEEE TRANSACTIONS ON AUTOMATIC CONTROL*
Skaf, J., Boyd, S. P.
2010; 55 (11): 2476-2487
- **Compressed sensing based cone-beam computed tomography reconstruction with a first-order method** *MEDICAL PHYSICS*
Choi, K., Wang, J., Zhu, L., Suh, T., Boyd, S., Xing, L.
2010; 37 (9): 5113-5125
- **Fast Algorithms for Resource Allocation in Wireless Cellular Networks** *IEEE-ACM TRANSACTIONS ON NETWORKING*
Madan, R., Boyd, S. P., Lall, S.
2010; 18 (3): 973-984
- **Segmentation of ARX-models using sum-of-norms regularization** *AUTOMATICA*
Ohlsson, H., Ljung, L., Boyd, S.
2010; 46 (6): 1107-1111
- **Techniques for exploring the suboptimal set** *OPTIMIZATION AND ENGINEERING*
Skaf, J., Boyd, S.
2010; 11 (2): 319-337
- **Real-Time Convex Optimization in Signal Processing** *IEEE SIGNAL PROCESSING MAGAZINE*
Matingley, J., Boyd, S.
2010; 27 (3): 50-61
- **Mixed linear system estimation and identification** *SIGNAL PROCESSING*
Zymnis, A., Boyd, S., Gorinevsky, D.
2010; 90 (3): 966-971
- **Fast Model Predictive Control Using Online Optimization** *IEEE TRANSACTIONS ON CONTROL SYSTEMS TECHNOLOGY*
Wang, Y., Boyd, S.
2010; 18 (2): 267-278
- **Compressed Sensing With Quantized Measurements** *IEEE SIGNAL PROCESSING LETTERS*
Zymnis, A., Boyd, S., Candes, E.
2010; 17 (2): 149-152
- **Adaptive Modulation in Wireless Networks with Smoothed Flow Utility** *IEEE Global Telecommunications Conference (GLOBECOM 2010)*
Akuiyibo, E., Boyd, S., O'Neill, D.

IEEE.2010

- **Detecting aircraft performance anomalies from cruise flight data**
Chu, E., Gorinesky, D., Boyd, S.
2010
- **Automatic code generation for real-time convex optimization** *Convex Optimization in Signal Processing and Communications*
Mattingley, J., Boyd, S.
edited by Eldar, Y., Palomar, D.
Cambridge University Press.2010: 1–41
- **State Smoothing by Sum-of-Norms Regularization** *49th IEEE Conference on Decision and Control (CDC)*
Ohlsson, H., Gustafsson, F., Ljung, L., Boyd, S.
IEEE.2010: 2880–2885
- **Trajectory Generation Using Sum-of-Norms Regularization** *49th IEEE Conference on Decision and Control (CDC)*
Ohlsson, H., Gustafsson, F., Ljung, L., Boyd, S.
IEEE.2010: 540–545
- **Adaptive Modulation with Smoothed Flow Utility** *EURASIP JOURNAL ON WIRELESS COMMUNICATIONS AND NETWORKING*
Akuiyibo, E., Boyd, S.
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