

# Stanford PROFILES



## Stephen Boyd

SAMSUNG PROFESSOR IN THE SCHOOL OF ENGINEERING AND PROFESSOR, BY COURTESY, OF COMPUTER SCIENCE AND OF MANAGEMENT SCIENCE AND ENGINEERING

Electrical Engineering

Web page: <http://web.stanford.edu/~boyd>

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## 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 & Awards

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)  
▶ All Honors & Awards (19)

## Program Affiliations

Institute for Computational and Mathematical Engineering (ICME)

## Professional Education

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

### CONTACT

📍 **Academic**

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University - Faculty