

Michael D. Sidman, Ph.D.
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EDUCATION and ACADEMIC HONORS

Ph.D., Stanford University, Stanford, California 1986

Dissertation: *Adaptive Control of a Flexible Structure*

Digital Equipment Corporation Fellow and University Resident 1983-86

Developed a high-performance self-tuning adaptive digital control system
for a lightly-damped mechanism in the Stanford Aerospace Robotics Lab.

Developed a robotic optical end-point sensor.

M.S.E.E. and B.S.E.E., Northeastern University, Boston, Massachusetts 1975

Graduated with *Highest Honor*

Cumulative GPA: 3.835 / 4.0

Combined BS/MS Five Year Cooperative Education Honors Program

Recipient:

The Northeastern University Cooperative Education Award 1975

- for Outstanding Performance in the Cooperative Education Program

The Northeastern University Sears B. Condit Scholarship Award 1975

- for Outstanding Scholarship

The Tau Beta Pi William M. Rand Award 1973

- for Distinguished Scholarship, True Integrity, Breadth of Interest, both
inside and outside of Engineering, Adaptability and Unselfish Activity

The Electrical Manufacturer's Representatives Club of New England Scholarship Award 1975

- for Outstanding Scholarship in the Department of Electrical Engineering

Member, National Honor Societies:

Phi Kappa Phi - interdisciplinary

Tau Beta Pi - engineering

Eta Kappa Nu - electrical engineering

President, Tau Beta Pi, National Engineering Honor Society, Northeastern Univ. Chapter 1974-75



9/26/2017

PROFESSIONAL ACTIVITIES and SOCIETIES

Listed in Marquis *Who'sWho in Science and Engineering*, 1998-

Senior Member, Institute of Electrical and Electronics Engineers (IEEE)
Member, IEEE Control Systems Society

Member, American Society of Mechanical Engineers (ASME International)
Member, ASME International Dynamic Systems and Control Division
Past Section Chairman:
Chairman, ASME International, Pikes Peak Section 2002-03
Co-Chairman, ASME International, Pikes Peak Section 2001-02

Appointed *Associate Professor Adjoint*, University of Colorado at Colorado Springs 1993
Department of Electrical and Computer Engineering, College of Engineering and Applied Science

Past member, General Engineering Board (formerly the General Advisory Board) of the
College of Engineering and Applied Science, University of Colorado at Colorado Springs

Third Party Provider to The MathWorks, Inc. 1993-2005

Chairman, National Storage Industry Consortium (NSIC) Disk Mechanics Task Force 1991

Associate Editor, ASME Journal: *Advances in Information Storage Systems* 1990-92

Conference Session Chairman:
PowerSystems World '96 Conference: *Motion Controllers/Drives*
1991 ASME Winter Annual Meeting: *Dynamics and Control in Information Storage Systems*
1990 ASME Winter Annual Meeting: *Adaptive and Repetitive Control*

Digital Equipment Corp. representative to National Storage Industry Consortium (NSIC) 1991-92

Digital Equipment Corporation representative and founding sponsor to:
Berkeley Sensor and Actuator Center (BSAC) 1989-92
Stanford's Information Systems Laboratory (ISL) 1990-92

Founded and hosted Digital Equipment Corporation's Servo/Mechanical Seminar Series
featuring leading researchers from universities and industry. 1986-92

Sponsored scholarship and equipment for a quadriplegic Ph.D. candidate in control systems
at the University of Colorado.

Sponsored applied research of Presidential Young Investigators at U.C. Berkeley and Stanford.

Hadassah Associate, Hadassah-Hebrew University Medical Center 1992-present

Member, Japan-America Society of Southern Colorado (JASSC) 2003-present

Board Member, Pikes Peak Regional Science Fair (PPRSF) 2015-present

Life Member, Stanford Alumni Association

PROFESSIONAL EXPERIENCE

INDEPENDENT ENGINEERING CONSULTANT, Colorado Springs, Colorado 1992-present

Technical Services

- Provide expert, results oriented engineering design services to manufacturers worldwide in a wide variety of industries.
- Develop comprehensive custom design & dynamic system simulation tools and computer models of electromechanical, motor control, control and signal processing systems and products.
- Optimize and simulate mechatronic (mechanics, electronics and control) systems, including disc/disk and tape drives, digital and adaptive servo systems, AC induction motor control systems, servo motor control systems, motion and vibration control systems, active damping systems, sensors and actuators.
- Teach advanced, on-site multidisciplinary comprehensive engineering design seminars, including Digital Servo Systems Short Courses and MATLAB/SIMULINK/Toolbox Training.
- Consult on high-performance servo system design and problem resolution.

Expert Services for the Legal Profession

- Expert witness and technical consultant in matters regarding intellectual property.
- Technical interpretation of patent specifications and claims.
- Provide expert reports, deposition and trial testimony.
- Assist in patent and technology licensing negotiations.
- Technical literature and patent searches.
- Graphical simulation of electromechanical, signal processing and control systems.

DIGITAL EQUIPMENT CORPORATION 1975-92

Mass Storage Advanced Development Group Colorado Springs, Colorado
Manager of Servo-Mechanical Advanced Development and Consultant Engineer 1986-92
Digital Equipment Corporation University Resident and Fellow at Stanford 1983-86
Consultant Engineer, Head of Advanced Servo Development Group 1978-83

Disk Drive Development Group Maynard, Massachusetts
Project Engineer and Principal Design Engineer 1976-78
Design Engineer 1975-76

Technical Accomplishments at Digital Equipment Corporation:

- Named inventor on seventeen disk drive related U.S. patents.
- Developed novel electromechanical and control systems technology to enable higher track densities and improved seek times in Digital's disk products.
- Initiated, managed and demonstrated AD work in active vibration control, adaptive digital servos, active damping, high-performance DSPs, optimal seek control and adaptive runout correction. Developed and demonstrated a high bandwidth dual-stage piezoelectric microactuator system. Developed analog chip for embedded servo burst demodulation. Demonstrated working breadboards to product development engineering groups.
- Digital Equipment Corporation's representative to the National Storage Industry Consortium (NSIC) for servo and mechanical technology. 1991-1992
- Digital Equipment Corporation representative and founding sponsor to:
Berkeley Sensor and Actuator Center (BSAC). 1989-92
Stanford's Information Systems Laboratory (ISL). 1990-92
- Initiated and sponsored applied research in MEMS based dual-stage microactuators and control system technology at Stanford, U.C. Berkeley and Univ. of Colorado, including sponsorship of two Presidential Young Investigators.
- Consulted to Digital's product development and manufacturing in Massachusetts and Colorado.
- Introduced and enhanced modern control and dynamic system simulation tools based on Matrixx/SystemBuild and MATLAB/SIMULINK to design engineering groups.
- Founded and hosted Digital Equipment Corporation's *Servo-Mechanical Seminar Series*.
- Conducted a wide variety of technical seminars, principally for product development engineers both inside the company and to storage industry and university groups.
- Conceived and developed a self-calibrating dedicated-plus-embedded disk drive servo system. Was the basis for the head positioning servo systems in the R81 and follow-on products. Portions were used in all Digital's disk products.
- Project Engineer - RK07 disk drive. Designed servo system and brought drive to manufacturing. Supervised the design of servo and read/write system test equipment.

DATAMETRICS, Inc. Wilmington, Massachusetts 1973-75
Developed a patented AC solid-state relay. Designed electronic equipment. Performed testing and calibration of precision electronic manometers. Cooperative Education.

M.I.T. CHARLES STARK DRAPER LAB Cambridge, Massachusetts 1972-73
Designed precision analog and digital inertial guidance system circuitry. Cooperative Education.

MEPPSCO, Inc. Malden, Massachusetts 1971-72
Programmed MHD generator gas dynamics computer simulations. Cooperative Education.
Evaluated prototype electric motor AC line switching apparatus.

PARKE MATHEMATICAL LABS, Inc. Carlisle, Massachusetts 1971
Performed scientific FORTRAN programming. Cooperative Education.

U.S. PATENTS Named inventor on eighteen U.S. patents. Sole inventor except as noted.

- Integral-Cycling Relay, U.S. Patent No. 4,153,870, Issued May 8, 1979.
- Dynamic Filter for a Moving Head Disk Storage System, U.S. Patent No. 4,172,267, Issued Oct 23, 1979.
- Adaptive Misposition Correcting Method for Magnetic Disk Servo System, U.S. Patent No. 4,536,809, Issued Aug 20, 1985.
- Velocity Estimator in a Disk Drive Positioning System, U.S. Patent No. 5,095,471, Issued Mar 10, 1992.
- Methods of Automatic Gain Control Basis Selection Half-Track Servoing, U.S. Patent No. 5,099,367, Issued Mar 24, 1992.
- Continuous-Plus-Embedded Servo System for Magnetic Disk Device, U.S. Patent No. 5,109,307, Issued Apr 28, 1992.
- Fault Tolerant Frame, Guardband and Index Detection Methods, U.S. Patent No. 5,115,359, Issued May 19, 1992.
- Embedded Burst Demodulation Methods, U.S. Patent No. 5,115,360, Issued May 19, 1992.
- Track Identification and Counting in a Disk Drive Positioning System, U.S. Patent No. 5,136,440, Issued Aug 4, 1992.
- Self-Tuning Adaptive Bandwidth Regulator (principal inventor), U.S. Patent No. 5,155,422, Issued Oct 13, 1992.
- Extended Range Servo System for Positioning a Disk Drive Head over a Selected Track, U.S. Patent No. 5,153,786, Issued Oct 6, 1992.
- Combination Embedded and Dedicated Servo System, U.S. Patent No. U.S. Patent No. 5,153,787, Issued Oct 6, 1992.
- High Speed Switched Automatic Gain Control, U.S. Patent No. 5,187,619, Issued Feb 16, 1993.
- Methods of Writing and Detecting Dibit Servo Encoding, U.S. Patent No. 5,202,802, Issued Apr 13, 1993.
- Disk Drive with Constant Bandwidth Automatic Gain Control, U.S. Patent No. 5,220,468, Issued Jun 15, 1993.
- Automatic Correction of Position Demodulator Offsets, U.S. Patent No. 5,247,398, Issued: Sep 21, 1993.
- Active Disturbance Compensation System for Disk Drives (principal inventor), U.S. Patent No. 5,426,545, Issued Jun 20, 1995.
- Robust Active Damping Control System (principal inventor), U.S. Patent No. 5,459,383, Issued Oct 17, 1995.

Recipient, Digital Equipment Corporation Cumulative Patent Awards 1987 and 1990

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