Adam Dershowitz, Ph.D., P.E.

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Education

M.I.T. Department of Aeronautics and Astronautics — Cambridge, MA
Ph.D. 1998 Thesis title: "The Effect of Options on Pilot Decision Making in the Presence of Risk."

Master of Science M.I.T. 1991
Research in area of helicopter icing with thesis title: "A Passive Infrared Ice Detection Technique for Helicopter Applications."

Bachelor of Science M.I.T. 1989

Stuyvesant High School 1985 — New York, NY

Experience

Exponent, Failure Analysis Associates — Los Angeles, CA
July 2004 – Present
Senior Engineer in Thermal Sciences practice. Performs aircraft accident and incident analysis. Investigates failures of systems and equipment for clients.

United Space Alliance, Advanced Technology Development — Houston, TX
October 2002 – July 2004
Developer on the Machine Learning project, to apply new techniques to future Mission Control operations. Serve as systems expert on the International Space Station Procedure Verification Tool. Served on orbital debris analysis team for Columbia accident investigation.

United Space Alliance, NASA Johnson Space Center — Houston, TX
February 1999 – July 2004
Mission controller in the Motion Control group of the International Space Station. Develop operational procedures, design and develop displays, and train mission controllers for the Interim Control Module, develop interface software for data flow in the Mission Control Center, and direct and conduct research with local universities through the Dual Use Academic Liaison program.

M.I.T. Department of Aeronautics and Astronautics — Cambridge, MA
February 1998 – January 1999
Post-Doctoral Associate in charge of installation, operation, and experimental design of robotic space suit tester, and human motion tracker. In charge of authoring the plan for MIT to function as the research arm of the Consolidated Space Operations Contract (CSOC). Research included human and space suit modeling, V.R., and robot control systems.

M.I.T. Lincoln Laboratory Lexington, MA
1992 – 1997
Research assistant on aircraft datalink system development and human factors design. Research involved cockpit displays of real-time weather and air traffic control systems.

Visidyne Inc. Burlington, MA
1994 – 1995
Consultant for product development and helicopter testing of a passive infrared ice detection system for helicopters.

M.I.T. Department of Aeronautics and Astronautics Cambridge, MA
1989 – 1991
Researched helicopter icing and ice detection. U.S. Patent No. 5,313,202 was granted for results of this work.

1988 – 1989, M.I.T. Undergraduate Research Opportunity (UROP)
Researched aircraft ice detection and measurement using ultrasound, visual, and chemical techniques. Developed chemical techniques that earned U.S. Patent No. 5,039,439.

M.I.T. Department of Earth and Planetary Science Cambridge, MA
Summer 1987
Built and tested circuit boards for a Charge Coupled Device (C.C.D.) camera for a telescope. Debugged and modified several other boards for the camera.

Teaching

NASA Lyndon B. Johnson Space Center Houston, TX
2001, 2002, 2003, 2004
Mentor for NASA KC-135 Texas Fly High college research flight team.

M.I.T. Department of Aeronautics and Astronautics Cambridge, MA
2000
Mission 2004 online freshman mentor for "Solving Complex Problems."

East Coast Aero Club Bedford, MA
1994 – 1998
Flight instructor responsible for instructing students towards private, instrument, and commercial ratings.

M.I.T. Department of Aeronautics and Astronautics Cambridge, MA
January - May 1998
Assisted in teaching and lecture preparation of "Introduction to Aerospace Engineering and Design" class.

January 1997 and January 1998
Organized and ran M.I.T. Private Pilot Ground School class.

1995 – 1996
Co-advisor to M.I.T. freshmen and seminar instructor for "All About Flying."

1991 – 1992
Hunsaker Teaching Fellowship and Head Graduate Teaching Assistant for Unified Engineering, the introductory aeronautical engineering course for M.I.T. sophomores.

Awards

NASA Certificate of Recognition from Inventions and Contributions Board, 2005

Nominated for NASA Software of the Year, 2003

NASA Space Flight Awareness Award March 2002

Recipient of 2001 Best Paper Award at AIAA Guidance, Navigation and Controls Conference

USA Superior Achievement Recognition Award for Technical Achievement – annual award for 2001

USA Employee of the month for Technical Achievement August 2001

NASA Astronaut Selection Finalist, 2000

Nominated to be one of M.I.T. Aero/Astro XVI sixteen "whose innovation and vision for the future will help to create a future of opportunity"

NASA Certificate of Recognition and cash award "For the creative development of a technical innovation which has been proposed for publication as a NASA Technical Brief" August 1996

Distinguished Contributor, B.F. Goodrich Collegiate Inventors Program, April 1992

Hunsaker Teaching Fellowship at M.I.T. awarded 1991

Certification

Certified Flight Instructor in single and multiengine airplanes and instruments. Commercial Airplane, Glider, Instrument, aerobatic and multiengine rated pilot, with more than 1200 hours of flight time.

Registered Professional Mechanical Engineer, California #M33404, Scuba diver, first aid, CPR and AED, 2nd degree black belt in Aikido, ski instructor.

Skills Computer: C/C++, Java, HTML, Basic, UNIX, SGI, PERL, VMS, 6502 and 8088 assembler, Macintosh, FORTRAN, MATLAB, Ada, etc.

Hardware, both analog and digital. Machine shop experience. Wind tunnel work. Graphite composite experience.

Other Experience

University of Southern California Aircraft Accident Investigation Course and Human Factors in Aviation Safety Course.

Chair, AIAA Space Operations Technical Committee, Houston

Commentator at 3rd International NASA Workshop on Planning and Scheduling for Space

Member of Planning Committee for Human.Systems 2001, "the International Conference on Psychosocial Adaptation and Human Factors Technologies"

Member of M.I.T. Soaring Association from 1990 – 1999 and chief tow pilot from 1995 – 1999

Guest commentator and consultant on several episodes of "The Inside Edge, Skiing Magazine on TV," the Science of Skiing segment, which aired on FOX TV, 1997 – 1998

Self-defense instructor and "mugger" at Model Mugging of Boston, a school that teaches p

Assistant Coach of M.I.T. Downhill Skiing Team 1991 – 1993
Member of M.I.T. Downhill Skiing Team 1985 – 1989

Organization Membership

AIAA (Senior Member), Sigma Xi, AOPA

Publication list for Adam Dershowitz

Kim, J., Crassidis, J. Vadali, S., and Dershowitz, A., "International Space Station Leak Localization Using Attitude Response Data," *Journal of Guidance, Control, and Dynamics*. Accepted for publication 2006

Chamitoff, G., James, G., Barker, D. and Dershowitz, A., "Martian resource locations: Identification and optimization," *Acta Astronautica* pp 756-769 vol 56, 2005

Chamitoff, G., James, G., Barker, D. and Dershowitz, A., "Mars Mission Optimization Based on Collocation of Resources," *Sixth International Conference on Mars*. Pasadena, California, July 20-25, 2003

Dershowitz, A., "ISPATOM: A Case Study in New-Generation Generics for Operational Environments," *Space Ops 2002/World Space Congress 2002*. Houston, TX, October 9-12, 2002

Dershowitz, A. and Chamitoff, G., "Bird's Eye View - A 3-D Situational Awareness Tool for the Space Station," *Space Ops 2002/World Space Congress 2002*. Houston, TX, October 9-12, 2002

Chamitoff, G., James, G., Barker, D. and Dershowitz, A., "Martian Resource Locations - Identification and Optimization," *53rd International Astronautical Congress (IAC) of the International Astronautical Federation (IAF)/ World Space Congress 2002*. Houston, TX, October 14-18, 2002

Kim, J., Crassidis, J. Vadali, S., and Dershowitz, A., "ISS Leak Localization Using Attitude Response," *Proceedings of AIAA Guidance, Navigation and Control Conference*, Montreal, Canada; August, 2001. Recipient of Best Paper Award

Chamitoff, G.E., Dershowitz, A.L., and Bryson, A.L., "Command Level Maneuver Optimization for the International Space Station," *Proceedings of 23rd Annual AAS Guidance and Control Conference*, Breckenridge, CO, February 2, 2000.

Dershowitz, A., "The Effect of Options on Pilot Decision Making in the Presence of Risk," Ph.D. thesis, Department of Aeronauts and Astronautics and MIT, Cambridge, MA, October, 1997.

Dershowitz, A., and Hansman, R.J. "An Exploration of Options in Value Based Aeronautical Decision Making," *Proceedings of Ninth International Symposium on Aviation Psychology*, Columbus, OH, April 30-May 1, 1997.

Dershowitz, A., A.T. Lind, D. C. Chandra, S. R. Bussolari, "The Effect of Compression Induced Distortion of Graphical Weather on Pilot Decision Making," *Eighth International Symposium on Aviation Psychology*, Columbus, OH, 1995.

Lind, A.T., Dershowitz, A., Chandra, D.C., and Bussolari, S.R., "A Human Factors Approach To The Development And Evaluation Of The Graphical Weather Service," *Proceedings of 14th Annual Digital Avionics Systems Conference*, Cambridge, MA, 1995.

Lind, A. T., Dershowitz, A., Chandra, D., and Bussolari, S.R., "The Effect Of Data Link-Provided Graphical Weather Images On Pilot Decision Making," *International Federation for Automatic Control*, Cambridge, MA, 1995.

Lind, A. T., Dershowitz, A., Chandra, D., and Bussolari, S.R., "The Effects of Compression-Induced Distortion of Graphical Weather Images on Pilot Perception, Acceptance, and Performance," *MIT Lincoln Laboratory*, Lexington, MA, ATC Project Report.

Lind, A. T., Dershowitz, A., and Bussolari, S.R., "The Influence of Data Link-Provided Graphical Weather on Pilot Decision Making," *MIT Lincoln Laboratory*, Lexington, MA, ATC (Air Traffic Control) Project Report–215, 1994.

Dershowitz, A., "Guns and Roses, at the Garden," *Voo Doo, the MIT humor Magazine*, Cambridge, MA, Summer 1993.

Dershowitz, A. “The Slippery Slope of Censorship,” *Counterpoint*, Cambridge MA, April 1992.

Dershowitz, A., and Hansman, R.J., “A Passive Infrared Ice Detection Technique for Helicopter Applications,” *MIT Aeronautical Systems Laboratory Report*, ASL-91-4, August 1991.

Presentation list for Adam Dershowitz

“What Happened? How an Engineering Laboratory can help you figure it out!” 2006 Winter Meeting of the California Conference of Arson Investigators, San Luis Obispo, CA January 30-February 1, 2006 (with A. Reza and S. Schroeder)