Swati Mohan

smohan@mit.edu

7355 SW 89th St, #426N
Miami, FL 33156

cell: (858) 583–1185
home: (305) 670-0912

Objective: A position in aerospace engineering or systems engineering, with a special interest in control systems, and mission or spacecraft design.

Education:

Massachusetts Institute of Technology, **Aeronautics/Astronautics**, Cambridge, MA
Doctorate of Philosophy from Space Systems Laboratory, *June 2007 – June 2010?*
Master of Science from Space Systems Laboratory, GPA: 4.9 *June 2007*
Cornell University, **College of Engineering**, Ithaca, NY
Bachelor of Science in **Aerospace / Mechanical Engineering**, cum laude *January 2004*
GPA: 3.63 Engineering Dean's List (2000 – 2003)

Research:

Reconfiguration Methods for Robotic Servicing and Assembly of Telescopes *Sept. '05 – June '07*
Developing and testing algorithms to update mass properties after docking of two satellites. Systems analysis for module partitioning based on different criteria. Work performed in support of a master's thesis at MIT Space Systems Laboratory.

Attitude Determination and Control Subsystem for Cubesat *Sept. '02 – Dec. '03*
Designed sensors arrangement for the satellite and converted sensor information into mathematical representation. Developed a PID control law to code instructions for magnetic torque coils.
Student Presenter**, AIAA Space 2003** conference, Long Beach, CA *September 2003*

Work Experience:

Mission Operations Systems Engineer, Jet Propulsion Laboratory, Pasadena, CA *Mar. '04 – Apr. '05*
Coordinated and documented interface and operations issues on JPL's flagship mission, Cassini-Huygens. Operations issues include adaptability strategy, Radio Science occultation operations process, and system level testing/V&V of Automated Sequence Processor tool suite.

Propulsion Intern, Jet Propulsion Laboratory, Pasadena, CA *Summer 2003*
Participated in Planetary Science Summer School modeling a chemical propulsion system for a conceptual asteroid sample return mission with Team X.

Mission Architecture Intern, California Institute of Technology, Pasadena, CA *Summer 2002*
Led Mission Architecture subsystem for team research on the impact of Solar Electric Propulsion on four planetary sample return missions in the Laboratory for Spacecraft and Mission Design.

Flight Systems Intern, Kennedy Space Center, Cape Canaveral, FL *Summer 2001*
Interned in NASA Spaceflight and Life Sciences Training Program. Conducted research in Advanced Life Support (ALS) division to determine optimum flight hardware for transgenic *Arabidopsis thaliana* plants.

Mechanical Design Intern, Goddard Space Flight Center, Greenbelt, MD *Summer 1999*
Designed technical parts using CAD, such as turbines, with the Structured Intern Program in the Mechanical Engineering department. Created a webpage to document parts catalogued. Completed an in depth tutorial on design software and HTML programming.

Relevant Coursework:

The Solar System: Planets, Satellites, and Rings, Elements of Astrophysics, Spacecraft/Satellite Engineering, Probability and Statistics, System Dynamics, Systems Engineering, Risk Management, Introduction to Optics, Nonlinear Control System Design, Multi-disciplinary Optimization, Stochastic Estimator & Control,

Swati Mohan

Extra-Curricular Activities:

Semi-Finalist NASA Lunar Ventures Business plan competition (2007)
Vice-President of Sidney-Pacific Graduate Community (2007-2008)
Treasurer of Graduate Association for Aeronautics and Astronautics at MIT (2006)
Competent Toastmaster and **Competent Leader** certified from Toastmasters International
Treasurer of JPL/Caltech Toastmasters Club 3292 (2004-2005)
Pilot in training, completed over 30 hours flight time in Cessna 172
Physics and Thermodynamics Tutor through Cornell College of Engineering (2002-2003)
Treasurer (2001), **Vice-President** (2002) of Cornell Hindu Student Council
Member of American Institute for Aeronautics and Astronautics (AIAA)

Special Skills:

Computer Languages:	MATLAB, HTML, C, C++, JAVA,
Computer Software:	Microsoft Office, LabView, IronCAD, SolidWorks.

Selected Publications:

Mohan S. “Tools for Reconfigurable Control System Comparisons for Autonomous Assembly Applications,” International Astronautical Congress, Daejon, South Korea. October 12-16, 2009. IAC-09.C1.4.3

Mohan S. and Miller D.W, “SPHERES Reconfigurable Framework and Control System Design for Autonomous Assembly,” AIAA Guidance, Navigation, and Control Conference, Chicago, Illinois, Aug. 10-13, 2009. AIAA-2009-5978.

Mohan, S, Saenz-Otero, A, Nolet, S, Miller, D W, Sell, S. “SPHERES flight operations testing and execution,” *ActaAstronautica* (2009), doi: 10.1016/j.actaastro.2009.03.039. April 2009

Mohan, S. “SPHERES Reconfigurable Control Allocation for Autonomous Assembly,” AIAA Guidance, Navigation, and Control Conference. Honolulu, HI. August 18-21, 2008. AIAA-2008-7468.

Mohan, S. "Modularity Analysis for On-orbit Servicing of an Interferometer." International Astronautical Congress. Hyderabad, India. September 24-28, 2007. IAC-07-A3.1.05

Mohan, S., A. Saenz-Otero, S.Nolet, and D.W. Miller. "SPHERES Flight Operations Testing and Execution." International Astronautical Congress. Hyderabad, India. September 24-28, 2007. IAC-07-A2.6.03

Hoff, N., S. Mohan, S. Nolet, and D.W. Miller. “Docking and reconfiguration of modular spacecraft – Preliminary SWARM testing at MSFC.” SPIE Defense & Security Symposium. Orlando, Florida. April 9-13, 2007.

Mohan, S., N. Hoff, S. Nolet, and D.W. Miller. “Autonomous Satellite Reconfiguration using SPHERES Micro-Satellite Testbed.” Dynamics and Control of Systems and Structures in Space Conference. London, England, July 16-20, 2006.

Mohan, S. and D.W. Miller. “Operational Impact of Mass Property Identification during On-Orbit Assembly.” SpaceOps 2006 Conference. Rome, Italy, June 19-23, 2006. AIAA-2006-5658.

Mohan, S. and N.T. Bridges. “Analysis of Orientation-dependence of Martian Gullies.” Poster presented at the Lunar Planetary and Science Conference, Houston, Texas, 3/16/2004.

McDaniel, R.D, S. Mohan, J. Juarez. “Inner Solar System Sample Return Missions Using Solar Electric Propulsion.” In *Aerospace Conference Proceedings, Vol. 1*. IEEE, 2003. pp. 508-525. ISSN: 1095-323X