

# Jay D. Bernheisel

jay@bernheisel.org



## ACADEMIC POSITIONS

Northwestern University, *Research Assistant* 2001-2006, Evanston, IL

- Developed robotic manipulation strategies using friction mechanics, linear programming, and optimal control theory.

Chapman University, *Adjunct Faculty* 2000-2001, Edwards Air Force Base, CA

## INDUSTRY POSITIONS

Cobotics, *Engineer* Summer 2001, Evanston, IL

418th Flight Test Squadron, *Flight Test Engineer* 1999-2001, Edwards Air Force Base, CA

436th Logistics Group, *Aircraft Maintenance Officer* 1996-1999, Dover Air Force Base, DE

## EDUCATION

Northwestern University, *Research Assistant* Evanston, IL

- Ph.D. in Mechanical Engineering, 2006
- Thesis: *Stable Transport of Assemblies*

Rose-Hulman Institute of Technology, Terre Haute, IN

- M.S. in Mechanical Engineering, 1997
- Thesis: *Modelling NACA Submerged Inlet Performance*
- Bachelor of Science in Mechanical Engineering, 1996
- German Technical Translator's Certificate, 1996

## PUBLICATIONS AND TALKS

### Journal Articles

- J. D. Bernheisel and K. M. Lynch. Stable transport of assemblies by pushing. *IEEE Transactions on Robotics*. In Press.
- J. D. Bernheisel and K. M. Lynch. Stable transport of assemblies: Pushing stacked parts. *IEEE Transactions on Automation Science and Engineering*, 1(2):163–168, 2004.

### Refereed Conference Papers

- Todd D. Murphey, David Choi, Jay Bernheisel, and Kevin M. Lynch. An example of parts handling and self-assembly using stable limit sets. In *IEEE/RSJ International Conference on Intelligent Robots and Systems*, 2005.

- J. D. Bernheisel and K. M. Lynch. Stable pushing of assemblies. In *IEEE International Conference on Robotics and Automation*, Barcelona, Spain, 2005.
- Todd D. Murphey, David Choi, Jay Bernheisel, and Kevin M. Lynch. Experiments in the use of stable limit sets for parts handling. In *International Conference on MEMS, NANO, and Smart Systems (ICMENS)*, pages 218–224, Banff, Alberta, Canada, 2004.
- J. Bernheisel and K. Lynch. Stable transport of assemblies: Pushing stacked parts. In *IEEE/RSJ International Conference on Intelligent Robots and Systems*, Las Vegas, NV, 2003.
- James A. Ford, Jay Bernheisel, and Thomas H. Hane. Development of the new airborne icing tanker. In *31st Symposium of the Society of Flight Test Engineers*, Turin, Italy, 2000.

### Meeting Presentations<sup>†</sup>

- J. D. Bernheisel and K. M. Lynch. Stable pushing of assemblies. In *IEEE International Conference on Robotics and Automation*, Barcelona, Spain, 2005.
- J. Bernheisel. Self-assembly using graph grammars. IGERT Brown Bag Lunch series presentation, 2004.
- J. Bernheisel. Toward parallel manipulation of many parts. Presentation at a meeting of the Laboratory for Intelligent Mechanical Systems, 2004.
- J. Bernheisel and K. Lynch. Stable transport of assemblies: Pushing stacked parts. In *IEEE/RSJ International Conference on Intelligent Robots and Systems*, Las Vegas, NV, 2003.
- J. Bernheisel. Pushing stacked parts. Presentation at a meeting of the Laboratory for Intelligent Mechanical Systems, 2002.
- J. Bernheisel. Aerial refueling and flight test. Presentation at a meeting of the Laboratory for Intelligent Mechanical Systems, 2001.
- James A. Ford, Jay Bernheisel, and Thomas H. Hane. Development of the new airborne icing tanker. In *31st Symposium of the Society of Flight Test Engineers*, Turin, Italy, 2000.

## TEACHING

### Northwestern University

Winter 2003-2004, Evanston, IL

- Teaching Assistant for ME 391 *Fundamentals of Control Systems*  
 “Jay was very receptive to questions and worked hard to make sure that an understanding was present. He seems to genuinely care that the material is effectively presented.” - CTEC comment  
 “Jay did a great job. Was helpful during labs, available at all lectures, and did a great job as a fill in instructor.” - CTEC comment

### Chapman University

2000-2001, Edwards AFB, CA

- MA 203 *Introduction to Statistics*
- MA 350 *Differential Equations*
- PHYS 102/PHYS 112 *General Physics/General Physics Laboratory*
- PHYS 104 *Introduction to Physical Sciences*

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<sup>†</sup>All personally presented.

## HONORS AND ACTIVITIES

### Awards and Honors

- IGERT Fellowship 2003-2005
- Cabell Fellowship 2001-02
- Robert M. Steinhauser Award (given to Rose-Hulman Institute of Technology's outstanding Junior in Mechanical Engineering), 1996
- Air Force ROTC Type I Scholarship, 1992-96
- Nynex-Staley Scholarship, 1992-96
- Steuben Society Scholarship, 1992

### Professional Activities

- Student Member, IEEE