

John Hauser

Education

University of California at Berkeley

Ph.D. in Electrical Engineering and Computer Sciences, 1989.

M.S. in Electrical Engineering and Computer Sciences, May 1986.

United States Air Force Academy

B.S. in Electrical Engineering and Computer Science, May 1980.

Awards and Honors

National Science Foundation Presidential Young Investigator Award (1991).

Schlumberger Foundation Fellowship (1987, 1988); MICRO Fellowship (1986);

Armed Forces Communications and Electronics Assoc. (AFCEA) Fellowship (1984).

Congressional Nomination to United States Air Force Academy (1976)

Experience

- 9/92-present **University of Colorado** Boulder, CO
Associate Professor, Dept. of Electrical and Computer Engineering
Courtesy Associate Professor, Dept. of Aerospace Engineering Sciences
- 11/09-present **Instituto Superior Técnico** Lisboa, Portugal
Visiting Professor, Institute for Systems and Robotics
- 7/04-6/07 **Università di Padova** Padova, Italy
Adjunct Professor, Dipartimento di Ingegneria dell'Informazione
- 8/98-8/06 **California Institute of Technology** Pasadena, CA
Visiting Associate, Control and Dynamical Systems Dept.
- 8/99-10/99 **Lund Institute of Technology** Lund, Sweden
Visiting Professor, Dept. of Automatic Control
- 5/97-7/97 **Ecole Supérieure d'Electricité** Gif sur Yvette, France
Visiting Professor, Laboratoire des Signaux et Systèmes CNRS.
- 9/89-8/92 **University of Southern California** Los Angeles, CA
Fred O'Green Assistant Professor of Engineering, Dept. of EE - Systems
- 6/86-8/89 **University of California** Berkeley, CA
Research Assistant, Teaching Assistant
- 6/80-8/86 **U.S. Air Force Officer and Pilot**
Flight Commander, Instructor Pilot
Total jet time 1500 hours.

Selected Publications

Alessandro Saccon and John Hauser. An efficient Newton method for general motorcycle kinematics. *Vehicle System Dynamics* 47(2) 2009, 221–241.

Peter MacMillin and John Hauser. Development and exploration of a rigid motorcycle model. *IEEE Conference on Decision and Control*. Shanghai, December 2009.

Robert Bailey and John Hauser. On the periodically driven inverted pendulum. *IEEE Conference on Decision and Control*. Shanghai, December 2009.

John Hauser and M. V. Sivaselvan. On the computation of compatible trajectories for hydraulic shakatables. *American Control Conference*, St. Louis, June 2009.

Giuseppe Notarstefano and John Hauser. On the curvature of the trajectory manifold of nonlinear systems. *IEEE Conference on Decision and Control*, Cancun, December 2008.

Alessandro Saccon, John Hauser, and Alessandro Beghi. A virtual rider for motorcycles: an approach based on optimal control and maneuver regulation. *3rd IEEE International Symposium on Communications, Control and Signal Processing (ISCCSP)*, St. Julians, Malta, March 2008.

M. V. Sivaselvan and John Hauser. Trajectory exploration approach to hybrid simulation. In *Hybrid Simulation: Theory, Implementation and Applications*, Taylor and Francis, 2008.

Stephen Waydo, John Hauser, Robert Bailey, Erik Klavins, Richard M. Murray. UAV as a reliable wingman: A flight demonstration. *IEEE Transactions on Control Systems Technology* 15(4) 2007, 680–688.

John Hauser and Alessandro Saccon. The driven rolling torus. *7th IFAC Symposium on Nonlinear Control Systems (NOLCOS 2007)*. Pretoria, South Africa, Aug 2007.

Alessandro Saccon, Ruggero Frezza, and John Hauser. Reduced dynamic inversion for planar and spatial vehicles. *7th IFAC Symposium on Nonlinear Control Systems (NOLCOS 2007)*. Pretoria, South Africa, Aug 2007.

Giuseppe Notarstefano, John Hauser, and Ruggero Frezza. Computing feasible trajectories for control-constrained systems: the PVTOL example. *7th IFAC Symposium on Nonlinear Control Systems (NOLCOS 2007)*. Pretoria, South Africa, Aug 2007.

John Hauser and Alessandro Saccon. A barrier function method for the optimization of trajectory functionals with constraints. *IEEE Conference on Decision and Control*. San Diego, December 2006.

John Hauser and Alessandro Saccon. Motorcycle modeling for high-performance maneuvering: Maximum velocity profile estimation. *IEEE Control Systems Magazine*, 26(5):89–105, 2006.

Hinke M. Osinga and John Hauser. The geometry of the solution set of nonlinear optimal control problems. *Journal of Dynamics and Differential Equations*, 18(4):881-900, 2006.

Ali Jadbabaie and John Hauser. On the stability of receding horizon control with a general terminal cost. *IEEE Transactions on Automatic Control*, 50(5):674–678 May 2005.

John Hauser, Alessandro Saccon, and Ruggero Frezza. On the driven inverted pendulum. *44th IEEE Conference on Decision and Control and 2005 European Control Conference, CDC-ECC '05*. 6176–6180. Valencia, Spain, December 2005.

Giuseppe Notarstefano, John Hauser, and Ruggero Frezza. Trajectory manifold exploration for the PVTOL aircraft. *44th IEEE Conference on Decision and Control and 2005 European Control Conference, CDC-ECC '05*. 5848–5853. Valencia, Spain, December 2005.

John Hauser, Alessandro Saccon, and Ruggero Frezza. Aggressive motorcycle trajectories. *IFAC Symposium on Nonlinear Control Systems*, Stuttgart, 2004.

Alessandro Saccon, John Hauser, and Ruggero Frezza. Control of a bicycle using model predictive control strategy. *IFAC Symposium on Nonlinear Control Systems*, Stuttgart, 2004.

Alessandro Saccon, John Hauser, and Ruggero Frezza. A planar motorcycle model for exploring chain drive-suspension interactions. *7th International Symposium on Advanced Vehicle Control (AVEC)*, Arnhem, The Netherlands, 2004.

John Hauser. An MPC approach to aggressive motorcycle maneuvering. *Sixteenth International Symposium on Mathematical Theory of Networks and Systems (MTNS2004)*, Leuven, Belgium, 2004.

John Hauser, Alessandro Saccon, and Ruggero Frezza. Achievable motorcycle trajectories. *IEEE Conference on Decision and Control*, Bahamas, 2004.

Alessandro Saccon and John Hauser. Quasi steady-state approximation of the dynamics of a planar motorcycle. *IEEE Conference on Decision and Control*, Bahamas, 2004.

Ryan Franz and John Hauser. Optimization based parameter identification of the Caltech ducted fan. *American Control Conference*, Denver, June 2003.

John Hauser. A projection operator approach to the optimization of trajectory functionals. *IFAC World Congress*, Barcelona, July 2002.

R.M. Murray, J. Hauser, A. Jadbabaie, M. Milam, W. Dunbar, and R. Franz. Online control customization via optimization based control. In G. Balas and T. Samad, eds., *Software Enabled Control: Information Technologies for Dynamical Systems*. John Wiley and Sons, 2002.

Ali Jadbabaie and John Hauser. Control of a thrust-vectoring flying wing: A receding horizon/LPV approach. *International Journal of Robust and Nonlinear Control*, 12(9):869-896, 2002.

Ryan Franz, Mark Milam, and John Hauser. Applied receding horizon control of the Caltech ducted fan. *American Control Conference*, Anchorage, 2002.

Ali Jadbabaie, Jie Yu, and John Hauser. Unconstrained receding horizon control of nonlinear systems. *IEEE Transactions on Automatic Control*, 46(5):776–783, 2001.

John Hauser. Plenary Lecture: High Performance Maneuvering for Thrust Vectoring Aircraft. *IEEE Conference on Control Applications*, Mexico City, September 2001.