

SKETCH OF CURRICULUM VITA

Douglas P. Looze

Education

1970-1974 - S.B. *Massachusetts Institute of Technology*
1974-1975 - S.M. *Massachusetts Institute of Technology*
1975-1978 - Ph.D. *Massachusetts Institute of Technology*

Professional Experience

9/86 - present University of Massachusetts, Amherst, MA
Associate Professor of Electrical and Computer Engineering
8/83 - 9/86 ALPHATECH, Inc., Burlington, MA
Staff Engineer; Senior Scientist
9/78 - 8/83 University of Illinois, Champaign, IL
Assistant Professor of Electrical Engineering

Consulting

1/2011 – present snAPPafra, Corp.
Design of Android Apps
6/2010 – 8/2010 Xinetics, Inc. Devon, MA
Laser steering control experiment design
9/1986 – 1/2011 ALPHATECH, Inc., Burlington, MA
Aerospace and adaptive optics applications of control system design; dynamic resource allocation; large scale system design and optimization.
1/1995 – 1/2000 Adaptive Optics Associates
Adaptive optics feedback system design and implementation for a 3.5 meter telescope.
1/1989 - 6/1990 General Electric Company
Analysis and multivariable control system design for growth of GaAs crystals.

Research Interests

Analysis and design of multivariable control systems; limitations of performance in feedback systems; robust control system modeling, analysis and design; resource allocation and optimization in dynamic systems; learning control systems.

Professional Affiliations

Institute of Electrical and Electronics Engineers (IEEE)
Optical Society of America (OSA)

Professional Activities

Power Systems Scholarship Committee (June 2011 – present)
Vice-President for Member Activities, IEEE Control Systems Society (1994–1996)
Board of Governors, IEEE Control Systems Society (1990–1996)

AdCom, IEEE Control Systems Society (1983–1984)
Associate Editor, *IEEE Transactions on Automatic Control* (1981–1983, 1985–1986)
Chair, Linear Systems Committee, IEEE Control Systems Society (1983)
Vice-Program Chair, 1990 ACC
Member of various Conference Operating and Program Committees
Organizer of Technical Sessions various conferences

Significant Publications

1. D. P. Looze, P. K. Houpt, N. R. Sandell, Jr. and M. Athans, “On Decentralized Estimation and Control with Application to Freeway Ramp Metering,” *IEEE Trans. A.C.*, Vol. AC-23, No. 2, April 1978, pp. 268-275.
2. D. P. Looze and J. S. Freudenberg, “Tradeoffs and Limitations in Feedback Systems,” in *The Control Handbook*, W. S. Levine (ed.), CRC Press, 1996, pp. 537-550.
3. D. P. Looze, “LQG Control for Adaptive Optics Systems using a Hybrid Model,” *JOSA A*, 26, 2009, p. 1–12.
4. J. Y. Wong and D. P. Looze “Robust Performance for Systems with Component-Bounded Signals,” *Automatica*, Vol. 31, No. 3, pp. 471-476.
5. D. P. Looze and N. R. Sandell, Jr., “Hierarchical Control of Weakly Coupled Systems,” *Automatica*, Vol. 18, No. 4, July 1982, pp. 467-472.

Synergistic Activities

Prof. Looze has worked with the MPIA since 1995 on the 3.6 m telescope operated at Calar Alto. He is responsible for the control algorithm design and much of the control algorithm coding for the ALFA AO system implemented at Calar Alto. He has also contributed to the AO research of the MPIA. Prof. Looze spent 1 month in summer 2001 conducting research at both MPIA and ESO, 4 months in fall 2003 at MPIA, and 1 month in summer 2004 at MPIA. He has also spent the fall of 2003 at MPIA working on research related to both MPIAs extreme adaptive optics and MCAO projects.

Collaborators

Dr. Stefan Hippler, Dr. Markus Feldt, Dr. Robert Weiss, Dr. Wolfgang Gaessler: MPIA, Heidelberg, Germany; Dr. Markus Kasper, Dr. Enrico Fedrigo, Dr. Henri Bonnet, Dr. Liviu Ivanescu, Dr. Sylvain Oberti: ESO, Garching, Germany; Dr. Orhan Beker, Mr. Nate Merritt, Mr. Ole Wulff: U. Mass., Amherst, MA.; Dr. Nikolas Denis, Alphatech, Inc, Burlington, MA.

Ph.D. Thesis Advisor: Nils R. Sandell, Jr., retired.

S.M. Thesis Advisor: Nils R. Sandell, Jr., retired.