

# CURRICULUM VITAE

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## EDUCATION

BSc. Eng., University of Peradeniya, 1996.

MPhil., University of Peradeniya, 2000.

MSc., University of Texas Tech, 2001.

Ph.D., University of Texas Tech, 2003.

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## CURRENT POSITION

Post doctoral research associate, Dept. of Mechanical Engineering, Texas Tech University.

Instructor, Dept. of Mechanical Engineering, Texas Tech University.

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## RESEARCH INTERESTS

- Nonlinear analysis and control of an electrostatically actuated MEMS.
- Modern Geometric Methods in Mechanics and Control.
- Pattern generation in coupled mechanical systems: symmetry, integrable systems and solitons.

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## TEACHING EXPERIENCE

- 01/2005–05/2005 Teaching “Applied Numerical Methods” for sophomore undergraduate students at the Dept. of Mechanical Engineering Texas Tech University.
- 01/2002– todate Teaching “Dynamical Systems and Control” for Senior undergraduate students at the Dept. of Mechanical Engineering Texas Tech University.
- 01/2000– 12/2001 Graduate Teaching Assistant of the lab “Systems and Vibrations” for Junior undergraduate students at the Dept. of Mechanical Engineering Texas Tech University.
- 09/1996–06/1999 Instructor, Dept. of Engineering Mathematics, University of Peradeniya.

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## AWARDS

- One of the five finalists for the best student paper award at the 2004 American Control Conference in Boston, MA. Paper title: D. H. S. Maithripala, Jordan M. Berg and W. P. Dayawansa, “An Intrinsic Observer for a Class of Simple Mechanical Systems on Lie Groups,”
- Spring 2002 Best professor award given by the Pi Tau Zigma society.
- Lubbock Power and Light and Energy scholarship, Fall 2000.
- Second best research paper award, University of Peradeniya annual research sessions, 1997.

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## PUBLICATIONS

### Refereed Journal Publications

1. D. H. S. Maithripala, B. D. Kawade, J. M. Berg, and W. P. Dayawansa, "A General Modeling and Control Framework for Electrostatically-Actuated Mechanical Systems," *To appear in the International Journal of Robust and Nonlinear Control*, 2005.
2. D. H. S. Maithripala, Jordan M. Berg and W. P. Dayawansa, "Almost-Global Tracking of Simple Mechanical Systems on a General Class of Lie Groups," *To appear in the IEEE Transactions on Automatic Control*, 2005.
3. D. H. S. Maithripala, W. P. Dayawansa and Jordan M. Berg, "Intrinsic Observer-Based Stabilization For Simple Mechanical Systems on Lie Groups," *To appear in the SIAM Journal on Optimization and Control*, 2005.
4. D. H. S. Maithripala, Jordan M. Berg and W. P. Dayawansa, "Control of an Electrostatic MEMS Using Static and Dynamic Output Feedback," *To Appear in the ASME Journal of Dynamical Systems Measurement and Control*, 2004.
5. D. H. S. Maithripala, Jordan M. Berg and W. P. Dayawansa, "Loss of Structurally Stable Regulation Implies Loss of Stability," *Trans. of the IEEE journal on Automatic Control*, 48(3), ppg 483–487, 2003.
6. S. Ekwaro-Osire, D. H. S. Maithripala and J. M. Berg, "A Series Expansion Approach to Interpreting the Spectra of the Timoshenko Beam," *Journal of Sound and Vibration*, 240(4), ppg 667–678, 2001.
7. D. H. S. Maithripala and K. S. Walgama, "Tunable AWC's for PID Controllers," *The Journal of the Institute of Engineers Sri Lanka*, April 1999.

### Conference Publications

1. D. H. S. Maithripala, Jordan M. Berg and W. P. Dayawansa, "State and Configuration Feedback for Almost Global Tracking of Simple Mechanical Systems on a General Class of Lie Groups," *Proceedings of the American Control Conference, Portland, Oregon*, 2005.
2. R. Palamakumbura, D. H. S. Maithripala, W. P. Dayawansa, and H. Inaba, "Control of Travelling Pulses in MEMS arrays: Numerical Evidence of Practical Asymptotic Stabilization," *Proceedings of the American Control Conference, Portland, Oregon*, 2005.
3. R. C. Anderson, B. D. Kawade, K. Ragulan, D. H. S. Maithripala, Jordan M. Berg, R. O. Gale and W. P. Dayawansa, "Integrated Charge and Position Sensing for Feedback Control of Electrostatic MEMS," *Proceedings of the SPIE conference on Smart Structures and Materials 2005: Sensors and Smart Structures Technologies for Civil, Mechanical, and Aerospace Systems, San Diego*, 6-10 March 2005.

4. D. H. S. Maithripala Jordan M. Berg and W. P. Dayawansa, "An Intrinsic Observer for a Class of Simple Mechanical Systems on Lie Groups," *Proc. of the American Control Conference, Boston, MA*, 2004.
5. D. H. S. Maithripala Jordan M. Berg and W. P. Dayawansa, "Nonlinear Dynamic Output Feedback Stabilization of Electrostatically Actuated MEMS." *Proc. of the Computation Decision and Control Conference, Maui, Hawaii*, 2003.
6. D. H. S. Maithripala, R. O. Gale, , M. W. Holtz, Jordan M. Berg and W. P. Dayawansa, "Nano-precision Control of Micromirrors using Output Feedback." *Proc. of the Computation Decision and Control Conference, Maui, Hawaii*, 2003.
7. D. H. S. Maithripala Jordan M. Berg and W. P. Dayawansa, "A Virtual Velocity Sensor for Improved Transient Performance of Electrostatically-Actuated MEMS," *Proc. of the International Mechanical Engineering Conference, Washington, DC*, 2003.
8. D. H. S. Maithripala Jordan M. Berg and W. P. Dayawansa, "A Port Controlled Hamiltonian Approach to Stabilization of an Electrostatic Actuator," *Proc. of the International Mechanical Engineering Conference, Washington, DC*, 2003.
9. D. H. S. Maithripala, Jordan M. Berg and W. P. Dayawansa, "Capacitive Stabilization of an Electrostatic Actuator: An Output Feedback Viewpoint," *Proc. of the American Control Conference, Denver, CO*, 2003.
10. D. H. S. Maithripala, Jordan M. Berg and W. P. Dayawansa, "Loss of Structurally Stable Regulation Implies Loss of Stability," *Proc. of the American Control Conference, Anchorage , AK*, 2002.
11. D. H. S. Maithripala, Jordan M. Berg and W. P. Dayawansa, "Parameter Space submanifolds Limiting Structurally Stable Regulation," *Proc. of the American Control Conference, Anchorage, AK*, 2002.

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## REFERENCES

These persons are familiar with my professional qualifications and my character:

**Prof. J. M. Berg**

Thesis Co-Supervisor: Dept. of Mech. Eng. Phone: +1-806-742-3563  
Box: 41021, Texas Tech Univ. Email: jordan.berg@ttu.edu  
Lubbock, TX-79409,  
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**Prof. W. P. Dayawansa**

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**Prof. K. S. Walgama**

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