

CURRICULUM VITAE

Name: Sridevi V. Sarma

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Place of Birth: Buffalo, NY

Website: <http://web.mit.edu/~sree/Public/sree.html>

Education:

2006 Ph.D. Department of Electrical Engineering and Computer Science (EECS), Minor in Brain and Cognitive Sciences, MIT, Cambridge, MA. (took a leave of absence from 1999-2003)

1997 S.M. Department of EECS, MIT, Cambridge, MA.

1994 B.S. Department of Electrical Engineering, Cornell University, Ithaca, NY.

Research Interests: Systems Modeling and Control, Computational Neuroscience, Large-Scale Optimization

Work Experience:

Research:

2007- Postdoctoral Fellow, *Statistical Neural Data Analysis*, Computational Neuroscience Laboratory Brain and Cognitive Science Dept, MIT.

2006- Postdoctoral Fellow, *Statistical Neural Data Analysis*, Neuroscience Statistics Research Laboratory, Harvard Medical School.

1996 Research Scientist, *Speech Recognition Group*, Digital Equipment Corporation, Cambridge, MA.

1993-1994 Research Scientist, *Research and Development Group*, Moog Inc., Buffalo, NY.

Teaching:

2006 Lecturer, *Introduction to Probability*, Department of EECS

2005 Lecturer, *Scientific Marketing*, MIT Professional Institute

2000 Teaching Assistant, *Dynamic Systems and Control*, Department of EECS, MIT

1998 Teaching Assistant, *Introduction to Communication, Control, and Signal Processing*, Department of EECS, MIT

1995-1997 Teaching Assistant, *Introduction to Probability*, Department of EECS, MIT

1994 Teaching Assistant, *Signal & Systems*, Department of EECS, MIT

1994 Teaching Assistant, *Signal & Systems*, Department of ECE, Cornell University

1992-1994 Workshop Facilitator, *Academic Excellence Workshop for Women and Minorities*

Entrepreneurial:

- 2000- Took a 3-year full leave of absence from M.I.T. to co-found, with Prof. Dahleh from M.I.T., a data-analytics start-up company based on innovative optimization technology to maximize ROI for retail companies. InfoLenz Corporation, Cambridge, MA.
- **Research and Development-** developed intellectual property based on large-scale optimization algorithms for Matching problems with high complexity.
 - **Fund Raising-** raised \$1.5M from angel investors, and \$200K from 2 National Science Foundation Small Business Innovative Research (SBIR) awards; Principle Investigator for SBIR project involving promotion design and strategic pricing in the presence of competition.
 - **Business Development-** made sales calls and presentations to Senior Executive Management at Borders Books, Express Fashion, Barnes & Noble, and other Fortune 500 retailers. Closed 4 pilot project deals totaling over \$100K in revenue.
 - **Client Engagements-** managed implementation of InfoLenz solutions for 3 large retail clients; results brought positive ROIs to all clients.
 - **Operations and Legal-** managed financials of company and legal matters.

Awards and Honors:

- 2008** *Burrough's Wellcome Fund Career Awards at the Scientific Interface Recipient*
- 2000 Best Session Paper Award-Automatic Control Conference
- 1995 National Science Foundation Research Fellow
- 1992 GE Faculty for the Future Research Fellow
- 1991-1994 Member of Eta Kappa Nu National Honor Society
- 1991-1994 Member of Tau Beta Pi National Honor Society

Editorial and Reviewing Activity:

- 2004- Reviewer for Proceedings of American Control Conference
- 2004- Reviewer for Proceedings of IEEE Conference on Decision and Control
- 2005- Journal Reviewer for IEEE Transactions on Automatic Control
- 2007- Journal Reviewer for IEEE Transactions on Neural Systems and Rehabilitation Engineering

Professional Societies:

- 2007- Institute of Electrical and Electronics Engineers-member
- 2007- Society for Neuroscience-member
- 2007- American Statistical Association-member

Publications:

Papers:

1. **Sarma S.V.**; Dahleh, M.A. Remote Control Over Noisy Channels: A First-Order Example. *IEEE Transactions on Automatic Control*. February 2007.
2. **Sarma, S.V.**; Dahleh, M.A.; Salapaka, S. On Time-Varying Bit-Allocation Maintaining Input-Output Stability and Performance: A Convex Parameterization. *IEEE Transactions on Automatic Control*. (to appear June 2008)
3. **Sarma, S.V.**; Dahleh, M.A. Real-Time Finite-Rate Feedforward Control. *IEEE Transactions on Automatic Control*. (submitted)
4. **Sarma, S.V.**; Cheng M.; Williams Z.; Hu R.; Brown E.N.; Eskandar E., A Comparison of Neural Spiking Activity in the Sub-Thalamic Nucleus of Parkinson's Patients to that of Healthy Primates. *Journal of Neuroscience*. (submitted)

5. **Sarma, S.V.**; Czanner G.; Nguyen DP.; Wirth S.; Wilson M.A.; Suzuki W.; Brown E.N. Bootstrap Methods for Point Process Models of Neural Spiking Activity. *Journal of Neurophysiology*. (submitted)
6. Coleman T.P.; **Sarma S.V.** A Computationally Efficient Method for Modeling Neural Spiking Activity with Point Processes Nonparametrically. *IEEE Transactions on Biomedical Engineering*. (submitted)
7. Czanner G.; **Sarma S.V.**; Eden U.; Wirth S.; Yanike ; Suzuki W. Toward Specifying a Signal-to-Noise Ratio for Neural Encoding Models. *Journal of Neuroscience*. (preprint)

Proceedings of Meetings:

1. Coleman T.P.; **Sarma, S.V.** A Computationally Efficient Method for Modeling Neural Spiking Activity with Point Processes Nonparametrically. *IEEE Conference on Decision and Control*. December 2007.
2. Czanner G.; **Sarma S.V.**; Eden U.T.; Wirth S.; Yanike M.; Suzuki W.; Brown E.N. Statistical Inference for Signal-to-Noise Ratio of non-Gaussian Systems with Application to Models of Neural Encoding. *Society for Neuroscience*. November 2007.
3. **Sarma, S.V.**; Dahleh, M.A. Real-Time Finite-Rate Tracking: Performance Limitations. *Proceedings of American Control Conference*. June 2007.
4. Coleman T.P.; **Sarma S.V.**. Using Convex Optimization for Nonparametric Statistical Analysis of Point Processes. *IEEE International Symposium on Information Theory (ISIT)*, Nice, France June 24-29, 2007.
5. Coleman T.P.; **Sarma S.V.**. Modeling Neural Spiking with Point Processes Nonparametrically: A Convex Optimization Approach. *Computational and Systems Neuroscience (CoSyNe)*. Salt Lake City, Utah, Feb. 2007.
6. **Sarma, S.V.**; Dahleh, M.A. Real-Time Finite-Rate Tracking. *IEEE Conference on Decision and Control*. December 2006.
7. **Sarma, S.V.**; Dahleh, M.A. Real-Time Finite-Rate Navigation. *Allerton Conference in Communication, Control, and Computing*. September 2006.
8. **Sarma, S.V.**, Dahleh, M.A. Synthesis of Simple Feedforward Networks: A First-Order Example. *IEEE Conference on Decision and Control*. December 2005.
9. **Sarma, S.V.**, Martins, N.C., Dahleh, M.A. Control with Communication Constraints: Stability and Performance Issues. *Allerton Conference in Communication, Control, and Computing*. September 2005.
10. **Sarma, S.V.**; Dahleh M.A.; Salapaka, S., On Time-Varying Bit-Allocation Maintaining Input-Output Stability: A Convex Parameterization. *IEEE Conference on Decision and Control*, 2004.
11. **Sarma, S.V.**; Dahleh M.A.; Salapaka, S., Synthesis of Efficient time-Varying Bit-Allocation Strategies Maintaining Input-Output Stability. *Allerton Conference in Communication, Control and Computing*, 2004.
12. **Sarma, S.V.**; Salapaka, S.; Dahleh M.A., A Convex Parameterization of Limited-Rate Time Varying Quantizers Maintaining Closed-Loop Stability. *Mediterranean Conference on Control and Automation*, 2004.
13. **Sarma, S.V.**; Massaquoi S.; Dahleh M.A., Reduction of a Wave-Variable Biological Arm Control Model. *Proceedings of American Control Conference*, Chicago, 2000.

Patent:

Sarma, S.V.; Warnick, S.; Dahleh, M.A. System and method for association object sets. *USPTO* (#20020161561)

LIST OF REFERENCES

<p><i>Munther Dahleh, Ph.D.</i> (dahleh@mit.edu) Laboratory for Information and Decision Systems Massachusetts Institute of Technology 77 Massachusetts Avenue Building 32-D732 Cambridge MA 02139 Phone: 617-253-3892</p>	<p><i>Emery Brown, M.D., Ph.D.</i> (enbrown1@mit.edu) Computational Neuroscience Laboratory, Brain and Cognitive Science Dept Harvard/MIT HST Division Massachusetts Institute of Technology 77 Massachusetts Avenue Building 46-6079 Cambridge MA 02139 Phone: 617-324-1880</p>
<p><i>Jeff Shamma, Ph.D.</i> (shamma@gatech.edu) Julian T. Hightower Chair in Systems & Controls School of Electrical and Computer Engineering Georgia Institute of Technology 777 Atlantic Dr NW Atlanta, GA 30332-0250 Phone: 404-894-3148</p>	<p><i>Emad N. Eskandar, M.D.</i> (eeskandar@partners.org) Director of Stereotactic & Functional Neurosurgery Massachusetts General Hospital (MGH) Assistant Professor Harvard Medical School Wang Ambulatory Care Center - 331 Neurosurgical Service, MGH Fruit Street Boston, MA, 02114 Phone: 617-724-6590</p>
<p><i>Srinivasa Salapaka, Ph.D.</i> (salapaka@uiuc.edu) Department of Mechanical and Industrial Engineering University of Illinois at Urbana-Champaign 362c Mechanical Engineering Building 1206 West Green Street Urbana, IL 61801 Phone: 217-244-4172</p>	<p><i>Ming Cheng, M.D.</i> (mlcheng@partners.org) Massachusetts General Hospital EDR 410 50 Blossom Street Boston, MA 02114 Phone: 617-726-3958</p>