Harsha Gangammanavar

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Education

Ohio State University — **Columbus, OH**
Ph.D. Integrated Systems Engineering, Aug. 2013
Dissertation Title: Multiple Timescale Stochastic Optimization with Application to Integrating Renewable Resources in Power Systems
Minors: Computer Science and Statistics

M.S. Electrical and Computer Engineering — Dec. 2009

Visvesvaraya Technological University — **Bangalore, India**
B.E. Electronics and Communications Engineering — May 2007

Appointments

Southern Methodist University — **Dallas, TX**
Engineering Management, Information, and Systems
Assistant Professor — Aug. 2016 - present

Clemson University — **Clemson, SC**
Industrial Engineering
Postdoctoral Fellow — Jul. 2015 - Jul. 2016

University of Southern California — **Los Angeles, CA**
Industrial and Systems Engineering
Visiting Assistant Professor — Aug. 2013 - May 2015

Ohio State University — **Columbus, OH**
Integrated Systems Engineering
Graduate Research and Teaching Assistant — Jan. 2010 - Jul. 2013

Research Interests

Methodologies: Multistage stochastic programming, large scale data-driven optimization, approximate dynamic programming.
Applications: Renewable energy integration in power systems, communication networks, health care logistics.

Journal Publications

1. H. Gangammanavar, S. Sen and V. M. Zavala, *Stochastic Optimization of Sub-Hourly Economic Dispatch With Wind Energy*, in IEEE Transactions on Power Systems, 31(2), 949-959, March 2016.
2. R. Li, H. Gangammanavar and A. Eryilmaz, *Optimal Dynamic Coding and Rate-Control for Serving Deadline-Constrained Traffic over Time-Varying Channels*, in IEEE Transactions on Information Theory, 58(10):6556-6571, 2012.

Papers Under Review

1. Z. Azadi, H. Gangammanavar and S. D. Eksioglu, *Stochastic Programming Approach for Vaccine Vile Distribution*, 2016.
2. H. Gangammanavar and S. Sen, *Two-scale Stochastic Optimization for Controlling Distributed Storage Devices*, 2016.

Working Papers

1. S. Wang, H. Gangammanavar, S. D. Eksioglu and S. Mason, *A Stochastic Optimization Framework for Distributed Decision-Making in Power Systems*, 2016.
2. S. Wang, H. Gangammanavar, S. D. Eksioglu and S. Mason, *A New Computational Method for Rolling-Horizon Stochastic Optimization with Application in Power System*, 2016.
3. H. Gangammanavar and S. Sen, *Stochastic Dynamic Linear Program: A Distribution-free Multistage Stochastic Programming Algorithm* , 2016.
4. Y. Deng, H. Gangammanavar and S. Sen, *Data+Optimization = Integrative Analytics: A New Framework for Data-Driven Optimization*, 2016.

Conference Proceedings

1. Z. Azadi, H. Gangammanavar and S. D. Eksioglu, *Stochastic Optimization for Vaccine Vial Replenishment*, in Proceedings of the 2016 Industrial and Systems Engineering Research Conference, Anaheim, CA.
2. H. Gangammanavar and A. Eryilmaz. *Dynamic Coding and Rate-Control for Serving Deadline-Constrained Traffic over Fading Channels.*, in Proceedings of IEEE International Symposium on Information Theory (ISIT) Austin TX, pp. 1788–1792, 13-18 June 2010.

Grants

1. Co-Principal Investigator: *"Statistical Optimality, Algorithms and Resilience in Time-Staged Stochastic Systems"*, with S. Sen (PI), **Air Force Office of Scientific Research**, #FA9550-15-1-0267, $450,000, Aug. 2015 - Dec. 2018.

Courses taught

Southern Methodist University

- EMIS 8360 Operations Research Models (G): Fall 2016

University of Southern California

- ISE 536 Linear Programming and Extensions (G): Fall 2014
- ISE 499 Special Topics: Integrative Systems Engineering (UG): Spring 2015, 2014
- ISE 330 Introduction to Operations Research: Deterministic Models (UG): Spring 2015, 2014; Fall 2014, 2013
- ISE 310 Facilities and Logistics (UG): Spring 2015

Professional Service

- *Member*:
  - Institute for Operations Research and Management Science (INFORMS)
  - Society of Industrial and Applied Mathematics (SIAM)
- *Vice-President*: Ohio State University INFORMS Student Chapter, 2011-2012.
- *Conference Session Chair*: INFORMS Annual Meeting 2014, San Francisco.
- *Referee*:
  - Operations Research
  - IIE Transactions
  - Energy Systems
  - Omega: International Journal of Management Science
  - Electric Power Systems Research
  - IEEE Transaction on Power Systems, IEEE Transaction on Smart Grid, IEEE Transaction on Sustainable Energy.

Seminars

- *Sampling-based Stochastic Programming Algorithms for Power Systems Applications*, Department of Engineering Management, Information, and Systems, Southern Methodist University, Feb. 2016.
- *Stochastic Optimization of Sub-hourly Economic Dispatch with Wind Energy* with S.Sen:
  - Ming Hsieh Department of Electrical Engineering, University of Southern California, Oct. 2014.
  - Daniel J Epstein Department of Industrial and Systems Engineering, University of Southern California, Oct. 2014.

Conference Presentations

- *Convergence Proofs of SDDP and Multi-stage Stochastic Decomposition* with S. Sen, International Conference on Stochastic Programming, Buzios, Brazil, 2016.
- *Stochastic Dynamic Linear Programming: A Sequential Sampling Algorithm* with S. Sen, International Conference on Stochastic Programming, Buzios, Brazil, 2016.
- *Stochastic Optimization for Vaccine Vial Replenishment* with Z. Azadi and S. D. Eksioglu, IIE Annual Conference, Anaheim, 2016.
- *A Rolling-Horizon Stochastic Optimization with Application in Power System* with S. Wang, S. D. Eksioglu and S. Mason, IIE Annual Conference, Anaheim, 2016.
- *A Stochastic Optimization Framework for Distributed Decision-Making in Power Systems* with S. Wang, S. D. Eksioglu and S. Mason, IIE Annual Conference, Anaheim, 2016.
- *Multistage Stochastic Optimization with Application in Energy Storage Control* with S. Sen:
  - INFORMS Optimization Society Conference, Princeton, Mar. 2016
  - INFORMS Annual Meeting, Philadelphia, Nov. 2015.
- *Multiple Timescale Stochastic Optimization for Integrating Renewable Resources* with S. Sen:
  - INFORMS Annual Meeting, San Francisco, Nov. 2014
  - Workshop on Optimization Under Uncertainty: Energy, Transportation and Natural Resources, University of California-Davis, Nov. 2014
  - Smartgrid Challenges, University of Arizona, Tucson, Mar. 2013.
- *Stochastic Optimization of Sub-hourly Economic Dispatch with Wind Generation*
  - INFORMS Annual Meeting, San Francisco, Nov. 2014
  - INFORMS Annual Meeting, Minneapolis, Oct. 2013
- *Dynamic Coding and Rate-Control for Serving Deadline-Constrained Traffic over Fading Channels*, with A. Eryilmaz, IEEE International Symposium on Information Theory (ISIT), Austin, Jun. 2010

Workshops

- A Conversation between Artificial Intelligence, Operations Research and Control Theory on Stochastic Optimization, NSF Workshop at Rutgers University, 2012
- Managing Uncertainty in Energy Infrastructure Investments, PhD Winter School, Oppdal, Norway, 2011 (recipient of workshop travel grant)
- 12th International Conference on Stochastic Programming and PhD Workshop, Halifax, NS, Canada, 2010
- Illinois Wireless Summer School, University of Illinois, Urbana-Champaign, IL, 2010 (recipient of summer school travel grant)