

Kamesh Munagala

D205 LSRC Building, Research Drive, Durham NC 27708

Phone: (919) 660 6598 Email: kamesh@cs.duke.edu

Web: <http://www.cs.duke.edu/~kamesh>

RESEARCH INTERESTS:

Design and analysis of approximation and online algorithms
Data-driven modeling and analysis of social networks
Stochastic optimization, decision theory, scheduling theory
Computational economics and algorithmic mechanism design
Big-data processing and query optimization

EDUCATION:

2003: **Ph.D.** (Computer Science), Stanford University

Advisor: Serge A. Plotkin

Thesis: Approximation algorithms for concave cost network flow problems

Research Area: Theory of Computing

2002: **M.S.** (Computer Science), Stanford University

1998: **B.Tech.** (Computer Science & Engineering), Indian Institute of Technology, Bombay

Advisor: Abhiram G. Ranade

Thesis: External memory graph algorithms

EMPLOYMENT:

Jun 2016 – present:

Professor of Computer Science, Duke University

Jan 2011 – Jun 2016:

Associate Professor of Computer Science, Duke University

Sep 2012 – Jul 2015:

Director of Graduate Studies, CS Dept., Duke University

Aug 2004 – Dec 2010:

Assistant Professor of Computer Science, Duke University

Apr 2003 – Jun 2004:

Postdoctoral Scholar, Department of Biochemistry, Stanford University School of Medicine. *Supervisor:* Patrick O. Brown.

VISITING/CONSULTING/INTERNSHIP POSITIONS:

Aug 2016 – Sep 2016:

Visiting Researcher, Simons Institute on Theory of Computing.

Jan 2012 – Aug 2012:

Visiting Research Professor, Twitter.

Jan 2009 – Sep 2009:

Consultant, Beckman Coulter, Inc.

Aug. 2008 – Dec. 2008:

Visiting Professor, College of Computing, Georgia Tech

Jan 2002 – May 2002:

Consultant, Strand Genomics Pvt. Ltd., Bangalore, India

Jun 2001 – Sep 2001:

Intern, Math Sciences Div., IBM T.J. Watson Research Center

Jun 2000 – Sep 2000:

Intern, Math of Networks and Systems group, Lucent Bell Labs

Jun 1999 – Sep 1999:

Intern, Math of Networks and Systems group, Lucent Bell Labs

ACADEMIC HONORS AND AWARDS:

- Alfred P. Sloan Foundation Research Fellowship, 2009-11.
- *Best Paper Award*, 18th Intl. World Wide Web Conference (WWW) held in Madrid, Spain, 2009.
- NSF CAREER Award, 2008.
- Ranked *first* in IIT-JEE-1994, the joint entrance examination for admission to the Indian Institutes of Technology (IIT).
- National Talent Search Scholarship, 1992. The Govt. of India awards this scholarship.

RESEARCH GRANTS: (AMOUNTS REFER TO MUNAGALA'S SHARE)

1. DARPA FA8750-16-2-0173 *Foundations of Sequential Learning*

Period: 05/16-01/17

Amount: \$71,000

PIs: R. Parr (Lead); K. Munagala; C. Rudin

2. NSF CCF-1637397. *AitF: Fair and Efficient Societal Decision Making via Collaborative*

Convex Optimization

- Period:** 09/16 – 08/19 **Amount:** \$333,000
PIs: K. Munagala (PI); Ashish Goel (Stanford; PI); James Fishkin (Stanford; co-PI)
3. NSF IIS-1447554. *BIGDATA: Sublinear Approaches to Big Social Data Problems.*
Period: 08/14 – 07/18 **Amount:** \$300,000
PIs: K. Munagala (PI); S. Muthukrishnan (Rutgers; PI); Ashish Goel (Stanford; PI)
 4. NSF CCF-1408784 *Multi-dimensional Scheduling and Resource Allocation in Data Centers.*
Period: 08/14 – 07/18 **Amount:** \$400,000
PIs: K. Munagala (PI); Benjamin Lee (co-PI); Sungjin Im (UC Merced; PI)
 5. ARO W911NF-14-1-0366. *Information Dynamics in Networks: Models and Algorithms*
Period: 08/14 – 07/15 **Amount:** \$61,000
 6. NSF CCF-1348696. *EAGER: Algorithmic paradigms for computation on MapReduce.*
Period: 08/13 – 07/15 **Amount:** \$100,000
 7. NSF CCF-1008065. *Auction design in constrained settings*
Period: 08/10 - 07/15 **Amount:** \$500,000
 8. NSF IIS-0964560. *Simplifying database management with automated experimentation*
Period: 08/10 – 07/15 **Amount:** \$375,000
PIs: Shivnath Babu (PI), Kamesh Munagala (co-PI)
 9. NSF CCF-0745761. *CAREER: Lightweight near-optimal stochastic control policies for information acquisition and exploitation.*
Period: 08/08 – 07/15 **Amount:** \$400,000
 10. Cisco/SVCF award. *Richer models and mechanisms for internet auctions*
Period: 06/11 – 06/14 **Amount:** \$75,000
 11. Alfred P. Sloan Foundation Research Fellowship
Period: 09/09 – 06/13 **Amount:** \$50,000
 12. NSF CNS-0540347. *DDDAS-TMRP: Dynamic sensor networks - Enabling the measurement, modeling, and prediction of biophysical change in a landscape.*
Period: 01/06 – 12/12 **Amount:** \$1,500,000 (split between 7 PIs)

PROFESSIONAL SERVICE:

- **Co-organizer**, *Workshop on Optimization and Decision Making under Uncertainty*, Simons Institute for the Theory of Computing, Fall 2016.
- **Academic Editor**, PeerJ Computer Science, 2015 – present.
- **Area Chair**, Web Search and Data Mining Conference (WSDM), 2014.
- **Area Chair**, Web Search and Data Mining Conference (WSDM), 2013.
- **Area Chair**, World Wide Web (WWW) Conference, Hyderabad, India. April 2011.
- **Co-organizer**, Workshop on Ad Auctions (co-located with EC '10), Cambridge, MA. June 2010.
- **Panelist** for NSF CISE Directorate, 2008, 2011, 2013, 2015.
- **Program Committee Member (selected):**
 - ACM-SIAM Symp. Discrete Algorithms (SODA), Barcelona. January 2017.
 - World Wide Web (WWW) Conference, Perth, Australia. April 2017.
 - ACM Conference on Electronic Commerce (EC), Palo Alto, CA. June 2014.
 - ACM-SIAM Symp. Discrete Algorithms (SODA), Portland OR. January 2014.
 - ACM Conference on Electronic Commerce (EC), Philadelphia, PA. June 2013.
 - World Wide Web (WWW) Conference, Rio De Janeiro, Brazil. April 2013
 - ACM Conference on Electronic Commerce (EC), Valencia, Spain. June 2012.
 - Workshop on Approximation Algorithms (APPROX), Boston, MA. August 2011.
 - ACM Conference on Electronic Commerce (EC), Cambridge, MA. June 2010.
 - ACM Symposium on Theory of Computing (STOC), Bethesda, MD. May 2009.
 - ACM Conference on Electronic Commerce (EC), Stanford, CA. July 2009.
 - International Conference on Data Engineering (ICDE), Shanghai, China. 2009.
 - Workshop on Approximation Algorithms (APPROX), Boston, MA. 2008.
 - European Symposium on Algorithms (ESA), Eilat, Israel. 2007.
- Reviewer for Journal of the ACM, SIAM Journal on Computing, ACM Transactions on Algorithms,

Algorithmica, and Transactions on Knowledge and Data Engineering.

TEACHING:

1.	CPS 290	Algorithmic Foundations of Data Science	Spring '17
2.	CPS 590	Optimization and Decision Making under Uncertainty	Spring '16, Fall '09
3.	CPS 630	Randomized Algorithms	Spring '13
4.	CPS 701	Introduction to Graduate School	Fall '12 - '14
5.	CPS 532	Graduate Algorithms	Fall '06, '07, '10, '11
6.	CPS 330	Undergraduate Algorithms	Spring '06 - '11, '14, '15
7.	CPS 260	Algorithms for Computational Biology	Fall '05
8.	CPS 240	Computational Complexity	Spring '05
9.	CPS 232	Approximation Algorithms	Fall '04

- I was rated in the top 5% of undergraduate instructors at Duke for CPS 230 taught in Fall 2011.

ADVISING:

Post-doc:

Kyle Fox	(2015 – present)	
Sungjin Im	(2012 – 13)	Asst. Prof. in EECS at UC Merced

Ph.D. Students:

Reza Alijani	(2015 – present)	
Sayan Bhattacharya	(2008 - 12)	Postdoc at MPI, Saarbrücken → ...
Brandon Fain	(2014 – present)	
Janardhan Kulkarni	(2010 - 15)	Postdoc at MSR, Redmond
Xiaoming Xu	(2010 - 15)	Software Engineer at Google
M.S. Student: Jen Burge	(2005 - 07)	Software Engineer at Facebook

Undergraduate Independent Study:

Danny DuVeau	(2016 - 17)	
Raghav Kedia	(2016)	
Seunghyun Lee	(2014)	
Siyang Chen	(2011 – 12)	Software Engineer at Google
Peng Shi	(2007 - 09)	Ph.D., MIT → ...
Kshipra Bhawalkar	(2007)	Ph.D., Stanford → Google Research

- Served on several Ph.D. defense, prelim exam, and Initiation Project committees at Duke.
- Janardhan Kulkarni **won** the *Best Dissertation Award in the Duke CS Department*, 2015.
- Peng Shi, was named one of twelve **Finalists** (male) for the *Computing Research Association Outstanding Undergraduate Researcher Award*, 2010.

SERVICE AT DUKE COMPUTER SCIENCE:

- Director of Graduate Studies (DGS), 2012 – 15.
- Faculty search committee, 2016-17; and several prior years.
- Admissions committee, 2014; and several prior years.
- Help organize the Algorithms Seminar and the CS-Econ Seminar in the CS Department.
- Colloquium Coordinator and Distinguished Lecture Series Coordinator, 2006-10.

PUBLICATIONS

DBLP Profile: <http://dblp.uni-trier.de/pers/hd/m/Munagala:Kamesh>

Google Scholar Profile: <https://scholar.google.com/citations?user=PJQPzgcAAAAJ>

Publications accepted to refereed journals:

1. N. Haghpanah, N. Immorlica, V. Mirrokni, and K. Munagala. Optimal auctions with positive network externalities. *ACM Trans. Econ. Comput. (TEAC)*, **1**(3), 2012.
2. S. Guha and K. Munagala. *Adaptive uncertainty resolution in Bayesian combinatorial optimization problems*. *ACM Transactions on Algorithms (TALG)*, **8**(1), 2012.
3. S. Bhattacharya, G. Goel, S. Gollapudi, and K. Munagala. *Budget constrained auctions with heterogeneous items*. *Theory of Computing (ToC)*, **8**:429-460, 2012.
4. J. Manweiler, N. Santhapuri, S. Sen, R. Roy Choudhury, S. Nelakuditi, and K. Munagala. *Order matters: Transmission reordering in wireless networks*. *IEEE/ACM Trans. Netw.* **20**(2), 2012.
5. M. Ahmad, A. Aboulnaga, S. Babu, and K. Munagala. *Interaction-aware scheduling of report-generation workloads*. *VLDB Journal*, **20**(4), 2011.
6. S. Guha, K. Munagala, and P. Shi. *Approximation algorithms for restless bandit problems*. *Journal of the ACM*, **58**(1), December 2010.
7. A. Goel, S. Guha, and K. Munagala. *How to probe for an extreme value*. *ACM Transactions on Algorithms*, **7**(1), November 2010.
8. S. Guha, A. Meyerson, and K. Munagala. *A constant-factor approximation to the single-sink edge installation problem*. *SIAM Journal on Computing*, **38**(6), pp 2426 – 42, 2009.
9. A. Meyerson, K. Munagala and S. Plotkin. *Cost-Distance: Two metric network design*. *SIAM Journal on Computing*, **38**(4), pp 1648 – 59, 2008.
10. V. Arya, N. Garg, R. Khandekar, A. Meyerson, K. Munagala, and V. Pandit. *Local search heuristics for k-median and facility location problems*. *SIAM J. Comput*, **33**(3): 544-562, 2004.
11. K. Munagala, R. Tibshirani, and P. O. Brown. *Cancer characterization and feature set extraction via discriminative margin clustering*. *BMC Bioinformatics*, **5**(21), March 2004.
12. S. Guha, A. Meyerson and K. Munagala. *A constant factor approximation algorithm for the fault-tolerant facility location problem*. *Journal of Algorithms*, **48**(2), pp 429 – 440, 2003.
13. A. Goel, and K. Munagala. *Extending greedy multicast routing to delay sensitive applications*. *Algorithmica*, **33**(3), pp 335 – 352, 2002.

Publications under submission:

14. M. Kunjir, B. Fain, K. Munagala, and S. Babu. *ROBUS: Fair cache allocation for multi-tenant data-parallel workloads*. arXiv:1504:06736, 2015.

Publications accepted to refereed conferences and workshops:

15. N. Garg, V. Kamble, A. Goel, D. Marn, and K. Munagala. *Collaborative optimization for collective decision-making in continuous spaces*. *Proc. WWW Conference*, 2017.
16. S. Banerjee, S. Gollapudi, K. Kollias, and K. Munagala. *Segmenting two-sided markets*. *Proc. WWW Conference*, 2017.
17. P. K. Agarwal, K. Fox, K. Munagala, and A. Nath. *Parallel algorithms for constructing range and nearest-neighbor searching data structures*. *Proc. Symposium on Principles of Database Systems (PODS)*, 2016.
18. S. Im, J. Kulkarni, and K. Munagala. *Competitive analysis of constrained queueing systems*. *Proc. Intl. Colloq. Automata, Languages, and Programming (ICALP)*, 2016.
19. S. Im, J. Kulkarni, B. Moseley, and K. Munagala. *A competitive flow time algorithm for heterogeneous clusters under polytope constraints*. *APPROX Conference*, 2016.
20. P. K. Agarwal, K. Fox, K. Munagala, and A. Nath. *Massively parallel algorithms for computing TIN DEMs and contour trees for large terrains*. *Proc. ACM SIGSPATIAL Conference*, 2016.
21. B. Fain, A. Goel, and K. Munagala. *The core of the participatory budgeting problem*. *Proc. Conf.*

- Web and Internet and Network Economics (WINE), 2016.
22. A. Goel, K. Munagala, A. Sharma, and H. Zhang. *A note on modeling retweet cascades on Twitter*. Workshop on Algorithms and Models for the Web Graph (WAW), 2015.
 23. Q. Cao, M. Sirivianos, X. Yang, and K. Munagala. *Combating friend spam using social rejections*. Proc. Intl. Conf. Distributed Computing Systems (ICDCS), 2015.
 24. S. Im, J. Kulkarni, and K. Munagala. *Competitive flow time algorithms for polyhedral scheduling*. Proc. IEEE Symposium on Foundations of Computer Science (FOCS), 2015.
 25. S. Im, J. Kulkarni, K. Munagala, and K. Pruhs. *Selfish-Migrate: A scalable algorithm for non-clairvoyantly scheduling heterogeneous processors*. Proc. IEEE Symposium on Foundations of Computer Science (FOCS), 2014.
 26. S. Im, J. Kulkarni, and K. Munagala. *Competitive algorithms from competitive equilibria: Non-clairvoyant scheduling under polyhedral constraints*. Proc. ACM Symposium on Theory of Computing (STOC), 2014.
 27. S. Bhattacharya, S. Im, J. Kulkarni, and K. Munagala. *Coordination mechanisms from (almost) all scheduling policies*. Proc. Conf. Innovations in Theoretical Computer Science (ITCS), 2014.
 28. S. Guha and K. Munagala. *Stochastic regret minimization via Thompson sampling*. Proc. Conf. Computational Learning Theory (COLT), 2014.
 29. K. Munagala and X. Xu. *Value-based network externalities and optimal auction design*. Proc. Conf. Web and Internet and Network Economics (WINE), 2014.
 30. B. Bahmani, A. Goel, and K. Munagala. *Efficient primal-dual graph algorithms for MapReduce*. Workshop on Algorithms and Models for the Web Graph (WAW), 2014.
 31. A. Das, S. Gollapudi, and K. Munagala. *Modeling opinion dynamics in social networks*. In Proc. ACM Conf. Web Search and Data Mining (WSDM), 2014.
 32. R. Bosagh Zadeh, A. Goel, K. Munagala, and A. Sharma. *On the precision of social and information networks*. 1st ACM Conference on Online Social Networks (COSN), 2013.
 33. K. Bhawalkar, S. Gollapudi, and K. Munagala. *Coevolutionary opinion formation games*. ACM Symposium on Theory of Computing (STOC), 2013.
 34. A. Bhalgat, S. Gollapudi, and K. Munagala. *Optimal auctions via the multiplicative weight method*. ACM Conference on Electronic Commerce (EC), 2013.
 35. S. Guha and K. Munagala. *Approximate indexability and bandit problems with concave rewards and delayed feedback*. APPROX-RANDOM, 2013.
 36. A. Bhalgat, S. Gollapudi, and K. Munagala. *Mechanisms and allocations with positive network externalities*. ACM Conference on Electronic Commerce (EC), 2012.
 37. J. Kulkarni and K. Munagala. *Algorithms for cost-aware scheduling*. Workshop on Approximation and Online Algorithms (WAOA), 2012.
 38. S. Bhattacharya, V. Conitzer, and K. Munagala. *Approximation algorithms for security games with costly resources*. Workshop on Internet and Network Economics (WINE), 2011.
 39. S. Bhattacharya, J. Kulkarni, K. Munagala, and X. Xu. *On allocations with negative externalities*. Workshop on Internet and Network Economics (WINE), 2011.
 40. Y. Zhang, K. Munagala, and J. Yang. *Storing matrices on disk: Theory and practice revisited*. Proc. VLDB Endowment (PVLDB), 2011.
 41. N. Haghpanah, N. Immorlica, V. Mirrokni, and K. Munagala. *Optimal auctions with positive network externalities*. ACM Conference on Electronic Commerce (EC-2011), 2011.
 42. S. Bhattacharya, S. Gollapudi, and K. Munagala. *Consideration set generation in sponsored search*. WWW Conference, 2011.
 43. S. Bhattacharya, G. Goel, S. Gollapudi, and K. Munagala. *Budget constrained auctions with heterogeneous items*. Accepted to 42nd ACM Symposium on Theory of Computing (STOC), 2010.
 44. S. Bhattacharya, V. Conitzer, K. Munagala, and L. Xia. *Incentive compatible budget elicitation in multi-unit auctions*. Proc. 21st ACM-SIAM Symposium on Discrete Algorithms (SODA), 2010.
 45. V. Conitzer, N. Immorlica, J. Letchford, K. Munagala, and L. Wagman. *False-name-proofness in social networks*. Proc. 6th Workshop on Internet and Network Economics (WINE), 2010.
 46. A. Goel and K. Munagala. *Hybrid keyword-search auctions*. Proc. 18th Intl. World Wide Web Conf. (WWW), pp 221 – 230, 2009. **(Best paper award)**
 47. S. Guha and K. Munagala. *Multi-armed bandits with metric switching costs*. Proc. 36th Intl. Colloq. on Automata, Languages and Programming (ICALP), pp 496 – 507, 2009.
 48. J. Letchford, V. Conitzer, and K. Munagala. *Learning and approximating the optimal strategy to*

- commit to*. Proc. 2nd Symposium on Algorithmic Game Theory (SAGT), pp 250 – 262, 2009.
49. S. Guha and K. Munagala. *Exceeding expectations and clustering uncertain data*. Proc. 28th ACM Symposium on Principles of Database Systems (PODS), pp 269 – 278, 2009.
 50. S. Guha, K. Munagala, and P. Shi. *Approximation algorithms for restless bandit problems*. Proc. 20th ACM-SIAM Symposium on Discrete Algorithms (SODA), pp 28 – 37, 2009. Full version available via the Computing Research Repository, arXiv:0711.3861.
 51. S. Babu, S. Duan, and K. Munagala. *Fa: A system for automating failure diagnosis*. Proc. 25th Intl. Conf. on Data Engineering (ICDE), pp 1012 – 1023, 2009.
 52. J. Manweiler, N. Santhapuri, S. Sen, R. Roy Choudhury, S. Nelakuditi, and K. Munagala. *Order matters: Transmission reordering in wireless networks*. MOBICOM, pp 61 – 72, 2009.
 53. K. Munagala and P. Shi. *The stochastic machine replenishment problem*. Proc. 13th Intl. Conf. on Integer Programming and Combinatorial Optimization (IPCO), pp 169 – 183, 2008.
 54. M. Ahmad, A. Abounaga, S. Babu, and K. Munagala. *Modeling and exploiting query interactions in database systems*. Proc. 17th ACM Conference on Information and Knowledge Management (CIKM), pp 183 – 192, 2008.
 55. S. Guha and K. Munagala. *Approximation algorithms for partial-information based stochastic control with Markovian rewards*. Proc. 48th IEEE Symposium on Foundations of Computer Science (FOCS), pp 483 – 493, 2007.
 56. S. Guha and K. Munagala. *Approximation algorithms for budgeted learning problems*. Proc. 39th ACM Symposium on Theory of Computing (STOC), pages 104 – 113, 2007.
 57. S. Guha and K. Munagala. *Model-driven optimization using adaptive probes*. Proc. 18th ACM-SIAM Symposium on Discrete Algorithms (SODA), pp 308 – 317, 2007.
 58. A. Silberstein, G. Puggioni, A. Gelfand, K. Munagala, and J. Yang. *Suppression and failures in a sensor network: A Bayesian approach*. Proc. 33rd Intl. Conference on Very Large Databases (VLDB), pp 842 – 853, 2007.
 59. K. Munagala, U. Srivastava, and J. Widom. *Optimization of continuous queries with shared expensive filters*. Proc. 26th ACM Symposium on Principles of Database Systems (PODS), pp 215 – 224, 2007.
 60. A. Silberstein, A., G. Filpus, K. Munagala, and J. Yang. *Data-driven processing in sensor networks*. Proc. 3rd Biennial Conference on Innovative Data Systems Research (CIDR), pp 10 – 21, 2007.
 61. U. Srivastava, K. Munagala, J. Widom, and R. Motwani. *Query optimization over web services*. Proc. 32nd Intl. Conf. Very Large Databases (VLDB), pp 355 – 366, 2006.
 62. A. Goel, S. Guha, and K. Munagala. *Asking the right questions: Model-driven optimization using probes*. Proc. 25th ACM Conf. on Principles of Database Systems (PODS), pp 203 – 212, 2006
 63. A. Silberstein, K. Munagala, and J. Yang. *Energy efficient monitoring of extreme values in sensor networks*. Proc. ACM SIGMOD Conference on Management of Data, pp 169 – 180, 2006.
 64. S. Guha, K. Munagala, and S. Sarkar. *Optimizing transmission rate in wireless channels using adaptive probes. (Short paper)* ACM SIGMETRICS/Performance Conference, pp 381-82, 2006.
 65. A. Silberstein, R. Braynard, C. Ellis, K. Munagala, and J. Yang. *A sampling based approach to optimizing top-k queries in sensor networks*. Proc. 22nd Intl. Conf. on Database Engineering (ICDE), pp 68 – 77, 2006.
 66. K. Munagala, J. Yang, and H. Yu. *Online view maintenance under a response-time constraint*. Proc. 13th European Symposium on Algorithms (ESA), pp 677 – 688, 2005.
 67. U. Srivastava, K. Munagala, and J. Widom. *Operator placement for in-network stream query processing*. Proc. 24th ACM Symp. on Principles of Database Systems (PODS), pp 250-58, 2005.
 68. K. Munagala, S. Babu, R. Motwani and J. Widom. *The pipelined set cover problem*. Proc. 10th Intl. Conf. on Database Theory (ICDT), pp 83 – 98, 2005.
 69. S. Babu, K. Munagala, R. Motwani and J. Widom. *Adaptive caching for continuous queries*. Proc. 21st Intl. Conf. on Database Engineering (ICDE), pp 118 – 129, 2005.
 70. S. Babu, R. Motwani, K. Munagala, I. Nishizawa, and J. Widom. *Adaptive ordering of pipelined stream filters*. Proc. ACM SIGMOD Conference on Management of Data, pp 407 – 418, 2004.
 71. S. Guha, S. Krishnan, K. Munagala, and S. Venkatasubramanian: *Application of the two-sided depth test to CSG rendering*. Proc. ACM SIGGRAPH Symposium on Interactive 3D Graphics (SI3D), pp 177 – 180, 2003.
 72. S. Guha and K. Munagala. *Generalized clustering problems*. Proc. 13th Annual ACM-SIAM

- Symposium on Discrete Algorithms (SODA), pp 484 – 485, 2002.
73. S. Guha and K. Munagala. *Improved algorithms for the data placement problem*. Proc. 13th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA), pp 106 – 107, 2002.
 74. A. Meyerson, K. Munagala, and S. Plotkin. *Designing networks incrementally*. Proc. 42nd IEEE Symposium on Foundations of Computer Science (FOCS), pp 406 – 415, 2001.
 75. S. Guha, A. Meyerson, and K. Munagala. *Constant-factor approximation for the single-sink edge installation problem*. Proc. 33rd ACM Symp. on Theory of Computing (STOC), pp 383–88, 2001.
 76. V. Arya, N. Garg, R. Khandekar, A. Meyerson, K. Munagala, and V. Pandit. *Local search heuristics for k -median and facility location problems*. Proc. 33rd ACM Symposium on Theory of Computing (STOC), pp 21 – 29, 2001.
 77. A. Meyerson, K. Munagala, and S. Plotkin. *Web Caching using Access Statistics*. Proc. 12th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA), pp 354 – 363, 2001.
 78. S. Guha, A. Meyerson and K. Munagala. *Improved algorithms for the fault-tolerant facility location problem*. Proc. 12th ACM-SIAM Symposium on Discrete Algorithms (SODA), pp 636 - 641, 2001.
 79. S. Guha, A. Meyerson, and K. Munagala. *Hierarchical placement and network design problems*. Proc. 41st IEEE Symp. on Foundations of Computer Science (FOCS), pp 603 – 612, 2000.
 80. A. Meyerson, K. Munagala, and S. Plotkin. *Cost-Distance: Two metric network design*. Proc. 41st IEEE Symposium on Foundations of Computer Science (FOCS), pp 624 – 630, 2000.
 81. M. Andrews and K. Munagala. *Online algorithms for caching multimedia streams*. Proc. 8th European Symposium on Algorithms (ESA), pp 64 – 75, 2000.
 82. A. Goel and K. Munagala. *Balancing Steiner trees and shortest path trees online*. Proc. 11th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA), pp 562 – 563, 2000.
 83. K. Munagala and A. G. Ranade. *I/O Complexity of graph algorithms*. Proc. 10th ACM-SIAM Symposium on Discrete Algorithms (SODA), pp 687 – 694, 1999.

Invited Articles and Book Chapters:

84. N. Haghpanah, N. Immorlica, V. Mirrokni, and K. Munagala. *How to approximate optimal auctions*. SIGEcom Exchanges 11(1), 2012.
85. J. Yang, K. Munagala, and A. Silberstein. *Data aggregation in sensor networks*. In Encyclopedia of Database Systems, L. Liu and T. Ozsü (ed.), pp 552 – 57, Springer-Verlag, 2009.
86. K. Munagala. *Local search heuristics for k -median and facility location problems*. In Encyclopedia of Algorithms, M-Y. Kao (ed.), Springer-Verlag, 2008.
87. P. G. Flikkema, P.K. Agarwal, J. S. Clark, C. S. Ellis, A. Gelfand, K. Munagala, and J. Yang. *From Data Reverence to Data Relevance: Model-Mediated Wireless Sensing of the Physical Environment*. Proc. Intl. Conf. on Computational Science (1), pp 988 – 994, 2007.
88. P. G. Flikkema, P.K. Agarwal, J. S. Clark, C. S. Ellis, A. Gelfand, K. Munagala, and J. Yang. *Model-driven dynamic control of embedded wireless sensor networks*. Proc. Intl. Conf. on Computer Science (3), pp 409 – 416, 2006.
89. S. Guha, K. Munagala, and S. Sarkar. *Jointly optimal transmission and probing strategies for multichannel wireless systems*. Proc. 40th Conf. on Information Sciences and Systems, 2006.

INVITED TALKS AND TUTORIALS

1. *Stochastic optimization and approximation algorithms*.
Tutorial presented at Algorithms and Uncertainty Boot Camp, Simons Institute on Theory of Computing. August 2016.
2. *Primal-dual graph algorithms on MapReduce*
 Workshop on Big Data Through the Lens of Sub-linear Algorithms, DIMACS, August 2015.
3. *Prophet inequalities and stochastic optimization*
Tutorial presented at Eurandom Workshop on Scheduling under Uncertainty. June 2015.
4. *Competitive algorithms from competitive equilibria*
 - Invited Talk, Workshop on Optimization and Decision Making under Uncertainty, Simons Institute on Theory of Computing, September 2016.
 - Invited Talk, International Symposium on Math Programming (ISMP), Pittsburgh. July 2015.

- Research on Algorithms and Incentives in Networks (RAIN) Seminar, Stanford. May 2015.
 - Bellairs Workshop on Algorithmic Game Theory, Barbados. May 2014.
- 5. *On the precision of social and information networks.*
Duke Network Analytics Center (DNAC) Seminar, February 2014.
- 6. *Weakly coupled stochastic decision systems.*
Dagstuhl Scheduling Seminar, March 2013.
- 7. *Coevolutionary opinion formation games.*
Theory Seminar, EECS Department, Northwestern University, April 2013.
- 8. *Auctions and allocations with positive network externalities.*
Stanford Theory Seminar, CS Department, Stanford, February 2012.
- 9. *Large-scale uncertainty management systems: Learning and exploiting your data*
Tutorial presented at SIGMOD-PODS Conference, 2009. (w/ S. Babu and S. Guha)
- 10. *Multi-armed bandits with side constraints*
 - Dagstuhl Seminar on Flexible Network Design, May 2010.
 - Invited talk, International Symposium on Math Programming (ISMP), Chicago 2009.
 - Microsoft Research, Bangalore, India. December 2009.
 - Theory Seminar, EECS Department, Northwestern University, October 2009.
 - Theory Seminar, CS Department, University of Wisconsin, Madison, September 2009.
- 11. *Incentive compatible budget elicitation in multi-unit auctions*
Invited talk, INFORMS Annual Conference, San Diego, 2009.
- 12. *Auctions with budget constraints*
Google Research, New York. October 2009.
- 13. *Hybrid keyword search auctions*
Invited talk, Market Algorithms and Optimization Workshop, Google NY. January 2009.
- 14. *Approximation algorithms for restless bandit problems*
 - Theory Seminar, University of Maryland, College Park, November 2008.
 - Computer Science Colloquium, University of Utah, October 2008.
 - ARC Colloquium, College of Computing, Georgia Tech., September 2008.
 - Algorithms Seminar, Computer Science Department, Stanford, March 2008.
 - Theory Seminar, School of Computer Science, CMU, February 2008.
 - LIDS Colloquium, EECS Department, MIT, February 2008.
- 15. *Approximation algorithms for budgeted learning*
 - Decision Sciences Seminar, Fuqua School of Business, Duke, September 2007.
 - Algorithms Seminar, Computer Science Department, Princeton University, August 2007.
 - Operations Research Seminar, MS&E Department, Stanford University, June 2007.
- 16. *The pipelined set cover problem*
Hewlett Packard Research Labs, Palo Alto, CA, April 2004.
Computer Science and Engineering Department, IIT Bombay, November 2003.
- 17. *A new clustering technique for gene expression analysis*
Invited Talk, Workshop on Integrated Logistics, Princeton University. September 2002.
- 18. *Approximation algorithms for the single source buy-at-bulk problem*
IBM T.J. Watson Research Center, Yorktown Heights, NY. August 2001.