Curriculum Vitae

Venkatesan Guruswami

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1 Personal Data

Born September, 1976 in Chennai, India.
Citizen of the United States, and Overseas Citizen of India.

2 Education

Massachusetts Institute of Technology, Cambridge, MA.

Ph.D., Computer Science — August 2001
Dissertation: List Decoding of Error-Correcting Codes
Supervisor: Professor Madhu Sudan

Master of Science, Computer Science — May 1999
Thesis: Query-efficient Checking of Proofs and Improved PCP Characterizations of NP.

Indian Institute of Technology, Madras (Chennai, India)

Bachelor of Technology (B.Tech), Computer Science and Engineering — June 1997

3 Academic Positions

Associate Professor — July 2009 - present
Computer Science Department
Carnegie Mellon University, Pittsburgh, PA.

Visiting Professor — Sept 2008 - June 2009
Computer Science Department
Carnegie Mellon University, Pittsburgh, PA.

Associate Professor — Sept 2007 - June 2009
Department of Computer Science and Engineering
University of Washington, Seattle, WA.

Member, School of Mathematics — Sept 2007 - May 2008
Institute for Advanced Study, Princeton, NJ.

Assistant Professor — Sept 2002 - Sept 2007
Department of Computer Science and Engineering
University of Washington, Seattle, WA.

Miller Research Fellow — Sept 2001 - Aug 2002
Miller Institute for Basic Research in Science
University of California, Berkeley, CA.

4 Research Interests

I am broadly interested in Theoretical Computer Science. Specific areas of interest include the theory of error-correcting codes and its applications, approximation algorithms and hardness of approximation, probabilistically checkable proofs, explicit combinatorial constructions, the theory of pseudorandomness, and algebraic algorithms.

5 Awards and Honors

Invited speaker, International Congress of Mathematicians, August 2010.

Best paper award (joint with C. Umans and S. Vadhan), Computational Complexity Conference, 2007.

David and Lucile Packard Fellowship for Science and Engineering, 2005. (One out of **16** fellows.)

Alfred P. Sloan Foundation Fellow, 2005.

Work on algebraic error-correction featured by the National Science Foundation in its "Discoveries" section. Original article, dated August 11, 2004, available at:
`http://nsf.gov/discoveries/disc_summ.jsp?cntn_id=100256&org=NSF`.

NSF Faculty Early Career Development (CAREER) Award, 2004.

Association for Computing Machinery (ACM) Doctoral Dissertation Award, 2002, for best doctoral thesis in Computer Science and Engineering.

George M. Sprowls Award, MIT, 2002, for best Ph.D thesis submitted to the Department of Electrical Engineering and Computer Science, MIT.

Miller Research Fellowship, 2001.

IEEE Information Theory Society Paper Award (joint with M. Sudan), 2000.

IBM Graduate Research Fellowship, 1999-2001.

AT&T Leadership Award, 1997

2nd position in the All India Joint Entrance Examination, 1993, for admissions into the Indian Institutes of Technology (IITs).

3rd position, Indian National Mathematical Olympiad, 1992.

National Board for Higher Mathematics (NBHM) scholarship, India, 1993-97.

National Talent Search Scholar, India, 1991.

6 External Professional activities

- Co-organizer, Summer Thematic Program on Constraint Satisfaction, Fields Institute, Toronto, July-August 2011.
- *Editorships*
  - Associate Editor, SIAM Journal on Computing.
  - Asociate Editor, IEEE Transactions on Information Theory.
  - Associate Editor, ACM Transactions on Computation Theory.
  - Scientific board member, Electronic Colloquium on Computational Complexity.
  - Area editor (Coding algorithms), Encyclopedia of Algorithms (published by Springer)
  - Guest co-editor (with S. Chawla and C. Dwork), *SIAM J. Computing*, special issue on selected papers from STOC 2008.
  - Guest co-editor (with V. Kabanets), *Computational Complexity*, **16**(2), 2007. Special issue on selected papers from CCC 2006 – the 21st IEEE Conference on Computational Complexity.
  - Guest co-editor (with E. Cohen), *Journal of Computer and System Sciences*, **68**(4), June 2004. Special issue on selected papers from the *43rd Annual IEEE Symposium on Foundations of Computer Science, November 2002.*
- Program Committee Chair, 27th IEEE Conference on Computational Complexity, June 2012.
- *Conference Program Committee memberships:*
  - (i) *STOC 2011*, 43rd ACM Symposium on Theory of Computing, June 2011.
  - (ii) *CCC 2010*, 25th IEEE Conference on Computational Complexity, June 2010.
  - (iii) *SODA 2010*, ACM-SIAM Symposium on Discrete Algorithms, Janurary 2010.
  - (iv) *FSTTCS 2008*, 28th Annual Conference on Foundations of Software Technology and Theoretical Computer Science, December 2008.
  - (v) *STOC 2008*, 40th ACM Symposium on Theory of Computing, May 2008.
  - (vi) *ITW 2008*, Information Theory Workshop, May 2008.
  - (vii) *LATIN 2008*, 8th Latin American Theoretical Informatics Symposium, April 2008.
  - (viii) *CATS 2008*, Computing: The Australasian Theory Symposium, January 2008.
  - (ix) *APPROX 2007*, 10th Intl. Workshop on Approximation Algorithms for Combinatorial Optimization Problems, August 2007.
  - (x) *ISIT 2006*, IEEE International Symposium on Information Theory, July 2006.
  - (xi) *CCC 2006*, 21st IEEE Conference on Computational Complexity, July 2006.
  - (xii) *FOCS 2005*, 46th Annual IEEE Symposium on Foundations of Computer Science, October 2005.
  - (xiii) *FSTTCS 2005*, 25th Annual Conference on Foundations of Software Technology and Theoretical Computer Science, December 2005.
  - (xiv) *FOCS 2002*, 43rd Annual IEEE Symposium on Foundations of Computer Science, November 2002.
- *Organizer, Minisymposium on coding theory*, *DM 2006*: SIAM Conference on Discrete Mathematics, June 2006.
- NSF panel member for Theory of Computing and Combinatorics (various years)
- Reviewer of research proposal for ISF (Israel Science Foundation), several years.
- Reviewer of research proposal for BSF (United States-Israel Binational Science Foundation), several years.

7 Graduate student supervision

Current Ph.D. students

- Ali Kemal Sinop
- Ameya Velingker (co-advised with Gary Miller)
- Carol Wang
- Patrick Xia
- Yuan Zhou (co-advised with Ryan O'Donnell)

Graduated Ph.D. students

- Atri Rudra, June 2007.
  Dissertation title: *List decoding and property testing of error-correcting codes.*
  Co-winner of the William Chan Memorial Dissertation Award at the University of Washington.
  Atri is an Assistant Professor at University at Buffalo, The State University of New York.
- Prasad Raghavendra, August 2009.
  Dissertation title: *Approximating NP-hard problems: Efficient algorithms and their limits.*
  Co-winner of the William Chan Memorial Dissertation Award at the University of Washington.
  Prasad is currently an Assistant Professor at Georgia Institute of Technology.

Postdocs

- Mahdi Cheraghchi, Sept 2011-present.
- Rishi Saket, Sept 2009-Aug 2010.
  Currently at IBM T.J. Watson.
- Parikshit Gopalan, March 2007-June 2008.
  Current employment: Microsoft Research Silicon Valley.

8 Publications

8.1 Books

[B1] V. Guruswami. *Algorithmic Results in List Decoding*, volume 2 of *Foundations and Trends in Theoretical Computer Science (FnT-TCS)*. NOW publishers, January 2007.

[B2] V. Guruswami. *List decoding of error-correcting codes.* Springer, Lecture Notes in Computer Science 3282, 2004. (Winning Thesis of the 2002 ACM Doctoral Dissertation Competition).

8.2 Refereed Journal Publications

[J1] P. Gopalan, V. Guruswami, and P. Raghavendra. List decoding tensor products and interleaved codes. *SIAM Journal on Computing*, 40(5):1432–1462, 2011.

[J2] V. Guruswami and Y. Zhou. Tight bounds on the approximability of almost-satisfiable horn SAT and exact hitting set. *Theory of Computing*, 2011. Accepted for publication.

[J3] V. Guruswami and A. K. Sinop. Improved inapproximability results for maximum k-colorable subgraph. *Theory of Computing*, 2011. Accepted for publication.

[J4] V. Guruswami, J. Håstad, R. Manokaran, P. Raghavendra, and M. Charikar. Beating the random ordering is hard: Every ordering csp is approximation resistant. *SIAM J. Comput.*, 40(3):878–914, 2011.

[J5] P. Gopalan and V. Guruswami. Hardness amplification within NP against deterministic algorithms. *Journal of Computer and System Sciences*, 77(1):107–121, 2011. Special issue to celebrate the award of the Kyoto Prize to Professor Richard Karp (invited paper).

[J6] V. Guruswami, J. Håstad, and S. Kopparty. On the list-decodability of random linear codes. *IEEE Transactions on Information Theory*, 57(2):718–725, 2011. Special issue dedicated to the scientific legacy of Ralf Koetter.

[J7] V. Guruswami and A. Rudra. Soft decoding, dual BCH codes, and better list-decodable ϵ-biased codes. *IEEE Transactions on Information Theory*, 57(2):705–717, 2011. Special issue dedicated to the scientific legacy of Ralf Koetter.

[J8] V. Guruswami and S. Vadhan. A lower bound on list size for list decoding. *IEEE Transactions on Information Theory*, 56(11):5681–5688, 2010.

[J9] M. Andrews, J. Chuzhoy, V. Guruswami, S. Khanna, K. Talwar, and L. Zhang. Inapproximability of edge-disjoint paths and low congestion routing on undirected graphs. *Combinatorica*, 30(5):485–520, 2010.

[J10] V. Guruswami and A. Rudra. The existence of concatenated codes list-decodable up to the Hamming bound. *IEEE Transactions on Information Theory*, 56(10):5195–5206, 2010.

[J11] V. Guruswami. Cyclotomic function fields, Artin-Frobenius automorphisms, and list error-correction with optimal rate. *Algebra and Number Theory*, 4(4):433–463, 2010.

[J12] V. Guruswami, J. Lee, and A. Razborov. Almost Euclidean sections of ℓ_1^n via expander codes. *Combinatorica*, 30(1):47–68, 2010.

[J13] E. Ben-Sasson, V. Guruswami, T. Kaufman, M. Sudan, and M. Viderman. Locally testable codes require redundant testers. *SIAM Journal on Computing*, 39(7):3230–3247, 2010.

[J14] V. Guruswami and P. Raghavendra. Hardness of solving sparse overdetermined linear systems: A 3-query PCP over integers. *ACM Transactions on Computation Theory*, 1(2), 2009.

[J15] V. Guruswami and P. Raghavendra. Hardness of learning halfspaces with noise. *SIAM Journal on Computing*, 39(2):742–765, 2009.

[J16] V. Guruswami, C. Umans, and S. Vadhan. Unbalanced expanders and randomness extractors from Parvaresh-Vardy codes. *Journal of the ACM*, 56(4), 2009.

[J17] V. Guruswami and A. Rudra. Error-correction up to the information-theoretic limit. *Communications of the ACM*, 52(3):87–95, March 2009. Invited Research Highlight.

[J18] V. Guruswami and A. Rudra. Better binary list-decodable codes via multilevel concatenation. *IEEE Transactions on Information Theory*, 55(1):19–26, January 2009.

[J19] V. Guruswami and V. Kabanets. Hardness amplification via space-efficient direct products. *Computational Complexity*, 17(4):475–500, December 2008.

[J20] V. Guruswami and A. Rudra. Explicit codes achieving list decoding capacity: Error-correction with optimal redundancy. *IEEE Transactions on Information Theory*, 54(1):135–150, January 2008.

[J21] V. Guruswami and A. Patthak. Correlated Algebraic-Geometric codes: Improved list decoding over bounded alphabets. *Mathematics of Computation*, 77(261):447–473, January 2008.

[J22] P. Gopalan, V. Guruswami, and R. Lipton. Algorithms for modular counting of roots of multivariate polynomials. *Algorithmica*, 50(4):479–496, 2008.

[J23] N. Alon, V. Guruswami, T. Kaufman, and M. Sudan. Guessing secrets efficiently via list decoding. *ACM Transactions on Algorithms*, 3(4):Article No. 42, November 2007.

[J24] I. Giotis and V. Guruswami. Correlation clustering with a fixed number of clusters. *Theory of Computing*, 2(13):249–266, 2006.

[J25] V. Guruswami and A. Rudra. Limits to list decoding Reed-Solomon codes. *IEEE Transactions on Information Theory*, 52(8):3642–3649, August 2006.

[J26] V. Guruswami and P. Indyk. Linear-time encodable/decodable codes with near-optimal rate. *IEEE Transactions on Information Theory*, 51(10):3393–3400, October 2005.

[J27] M. Charikar, V. Guruswami, and A. Wirth. Clustering with qualitative information. *Journal of Computer and System Sciences*, 71(3):360–383, October 2005. Special issue: Learning Theory 2003.

[J28] V. Guruswami and A. Vardy. Maximum-Likelihood Decoding of Reed-Solomon codes is NP-hard. *IEEE Transactions on Information Theory*, 51(7):2249–2256, July 2005.

[J29] V. Guruswami, D. Micciancio, and O. Regev. The complexity of the covering radius problem. *Computational Complexity*, 14(2):90–121, June 2005. Special issue devoted to selected papers from the 2004 Conference on Computational Complexity (CCC'04).

[J30] I. Dinur, V. Guruswami, S. Khot, and O. Regev. A new multilayered PCP and the hardness of hypergraph vertex cover. *SIAM Journal on Computing*, 34(5):1129–1146, 2005.

[J31] V. Guruswami and S. Khanna. On the hardness of 4-coloring a 3-colorable graph. *SIAM Journal on Discrete Mathematics*, 18(1):30–40, 2004.

[J32] L. Engebretsen and V. Guruswami. Is constraint satisfaction over two variables always easy? *Random Structures and Algorithms*, 25(2):150–178, September 2004.

[J33] M. Guruswamy, V. Guruswami, and C. S. R. Murthy. Randomized routing and wavelength requirements in wavelength routed WDM multistage, hypercube, and de bruijn networks. *Journal of Parallel and Distributed Computing*, 64:385–399, 2004.

[J34] V. Guruswami. List decoding from erasures: Bounds and code constructions. *IEEE Transactions on Information Theory*, 49(11):2826–2833, 2003.

[J35] V. Guruswami. Inapproximability results for set splitting and satisfiability problems with no mixed clauses. *Algorithmica*, 38(3):451–469, December 2003.

[J36] V. Guruswami, S. Khanna, R. Rajaraman, F. B. Shepherd, and M. Yannakakis. Near-optimal hardness results and approximation algorithms for edge-disjoint paths and related problems. *J. Comput. Syst. Sci.*, 67(3):473–496, 2003.

[J37] V. Guruswami. Constructions of codes from number fields. *IEEE Transactions on Information Theory*, 49(3):594–603, 2003.

[J38] V. Guruswami, J. Håstad, and M. Sudan. Hardness of approximate hypergraph coloring. *SIAM Journal on Computing*, 31(6):1663–1686, 2002.

[J39] M. Charikar, R. Fagin, V. Guruswami, J. M. Kleinberg, P. Raghavan, and A. Sahai. Query strategies for priced information. *J. Comput. Syst. Sci.*, 64(4):785–819, 2002.

[J40] V. Guruswami, J. Håstad, M. Sudan, and D. Zuckerman. Combinatorial bounds for list decoding. *IEEE Transactions on Information Theory*, 48(5):1021–1035, 2002.

[J41] V. Guruswami, C. P. Rangan, M. Chang, G. J. Chang, and C. K. Wong. The K_r-packing problem. *Computing*, 66(1):79–89, 2001.

[J42] V. Guruswami and M. Sudan. On representations of Algebraic-geometric codes for list decoding. *IEEE Transactions on Information Theory*, 47(4):1610–1613, 2001.

[J43] V. Guruswami and C. P. Rangan. Algorithmic aspects of clique-transversal and clique-independent sets. *Discrete Applied Mathematics*, 100(3):183–202, 2000.

[J44] V. Guruswami and M. Sudan. Improved decoding of Reed-Solomon and Algebraic-geometric codes. *IEEE Transactions on Information Theory*, 45(6):1757–1767, 1999.

[J45] V. Guruswami. Enumerative aspects of certain classes of perfect graphs. *Discrete Mathematics*, 205:97–117, 1999.

[J46] V. Guruswami. Maximum cut on line and total graphs. *Discrete Applied Mathematics*, 92:217–221, 1999.

[J47] V. Guruswami and C. P. Rangan. A natural family of optimization problems with arbitrarily small approximation thresholds. *Information Processing Letters*, 68(5):241–248, 1998.

[J48] V. Guruswami, U. Rotics, M. S. Madanlal, J. Makowsky, and C. P. Rangan. Restrictions of minimum spanner problems. *Information and Computation*, 136(2):143–164, 1997.

[J49] M. S. Madanlal, V. Guruswami, and C. P. Rangan. Tree 3-spanners on interval, permutation, and regular bipartite graphs. *Information Processing Letters*, 59:97–102, 1996.

8.3 Papers in refereed conferences

[C1] V. Guruswami, S. Narayanan, and C. Wang. List decoding subspaces codes from insertions and deletions. In *Proceedings of the 3rd conferences on Innovations in Thoeretical Computer Science (ITCS)*, 2012. To appear.

[C2] V. Guruswami and A. K. Sinop. Optimal column-based low-rank matrix reconstruction. In *Proceedings of the 23rd Annual ACM-SIAM Symposium on Discrete Algorithms*, 2012. To appear.

[C3] V. Guruswami, P. Raghavendra, R. Saket, and Y. Wu. Bypassing UGC from some geometric inapproximability results. In *Proceedings of the 23rd Annual ACM-SIAM Symposium on Discrete Algorithms*, 2012. To appear.

[C4] A. Bhaskara, M. Charikar, V. Guruswami, A. Vijayaraghavan, and Y. Zhou. Polynomial integrality gaps for strong SDP relaxations of densest k-subgraph. In *Proceedings of the 23rd Annual ACM-SIAM Symposium on Discrete Algorithms*, 2012. To appear.

[C5] V. Guruswami and A. K. Sinop. Lasserre hierarchy, higher eigenvalues, and approximation schemes for graph partitioning and quadratic integer programming with PSD objectives. In *Proceedings of the 52nd IEEE Symposium on Foundations of Computer Science*, 2011. To appear.

[C6] V. Guruswami and C. Wang. Optimal rate list decoding via derivative codes. In *Proceedings of APPROX/RANDOM 2011*, pages 593–604, August 2011.

[C7] V. Guruswami. Linear-algebraic list decoding of folded Reed-Solomon codes. In *Proceedings of the 26th IEEE Conference on Computational Complexity*, June 2011.

[C8] V. Guruswami, Y. Makarychev, P. Raghavendra, D. Steurer, and Y. Zhou. Finding almost-complete graph bisections. In *Proceedings of the 2nd Symposium on Innovations in Computer Science*, January 2011.

[C9] V. Guruswami and Y. Zhou. Tight bounds on the approximability of almost-satisfiable Horn-Sat and exact hitting set. In *Proceedings of the 22nd Annual ACM-SIAM Symposium on Discrete Algorithms*, January 2011.

[C10] V. Guruswami and A. K. Sinop. The complexity of finding independent sets in bounded degree (hyper)graphs of low chromatic number. In *Proceedings of the 22nd Annual ACM-SIAM Symposium on Discrete Algorithms*, January 2011.

[C11] V. Guruswami and A. Smith. Codes for computationally simple channels: Explicit codes with optimal rate. In *Proceedings of the 51st IEEE Symposium on the Foundations of Computer Science*, pages 723–732, October 2010.

[C12] V. Guruswami, J. Håstad, and S. Kopparty. On the list-decodability of random linear codes. In *Proceedings of the 42th ACM Symposium on Theory of Computing*, pages 409–416, June 2010.

[C13] V. Guruswami and R. Saket. On the inapproximability of vertex cover on k-partite k-uniform hypergraphs. In *Proceedings of the 37th International Colloquium on Automata, Languages and Programming*, pages 360–371, 2010.

[C14] V. Guruswami, S. Khot, R. O'Donnell, P. Popat, M. Tulsiani, and Y. Wu. SDP gaps for 2-to-1 and other Label-Cover variants. In *Proceedings of the 37th International Colloquium on Automata, Languages and Programming*, pages 617–628, 2010.

[C15] V. Feldman, V. Guruswami, P. Raghavendra, and Y. Wu. Agnostic learning of monomials by halfspaces is hard. In *Proceedings of the 50th IEEE Symposium on Foundations of Computer Science*, pages 385–394, October 2009.

[C16] V. Guruswami and A. K. Sinop. Improved inapproximability results for maximum k-colorable subgraph. In *Proceedings of the 12th International Workshop on Approximation, Randomization, and Combinatorial Optimization: Algorithms and Techniques (APPROX)*, pages 163–176, 2009.

[C17] M. Charikar, V. Guruswami, and R. Manokaran. Every permutation CSP of arity 3 is approximation resistant. In *Proceedings of the 24th IEEE Conference on Computational Complexity*, pages 62–73, July 2009.

[C18] E. Ben-Sasson, V. Guruswami, T. Kaufman, M. Sudan, and M. Viderman. Locally testable codes require redundant testers. In *Proceedings of the 24th IEEE Conference on Computational Complexity*, pages 52–61, July 2009.

[C19] V. Guruswami. Artin automorphisms, cyclotomic function fields, and folded list-decodable codes. In *Proceedings of the 41st ACM Symposium on Theory of Computing (STOC)*, pages 23–32, May-June 2009.

[C20] P. Gopalan, V. Guruswami, and P. Raghavendra. List decoding tensor products and interleaved codes. In *Proceedings of the 41st ACM Symposium on Theory of Computing (STOC)*, pages 13–22, May-June 2009.

[C21] M. H. Bateni, M. Charikar, and V. Guruswami. Maxmin allocation via degree lower-bounded arborescences. In *Proceedings of the 41st ACM Symposium on Theory of Computing (STOC)*, pages 543–552, May-June 2009.

[C22] V. Guruswami, R. Manokaran, and P. Raghavendra. Beating the random ordering is hard: Inapproximability of maximum acyclic subgraph. In *Proceedings of the 49th IEEE Symposium on Foundations of Computer Science*, pages 573–582, October 2008.

[C23] V. Guruswami, J. Lee, and A. Wigderson. Euclidean sections with sublinear randomness and error-correction over the reals. In *Proceedings of the 12th International Workshop on Randomized Techniques in Computation*, pages 444–454, August 2008.

[C24] V. Guruswami and P. Raghavendra. Constraint satisfaction over a non-boolean domain: Approximation algorithms and Unique Games hardness. In *Proceedings of the 11th International Workshop on Approximation Algorithms for Combinatorial Optimization Problems*, pages 77–90, August 2008.

[C25] V. Guruswami and A. Rudra. Soft decoding, dual BCH codes, and better list-decodable ϵ-biased codes. In *Proceedings of the 23rd IEEE Conference on Computational Complexity*, pages 163–174, June 2008.

[C26] P. Gopalan and V. Guruswami. Hardness amplification within NP against deterministic algorithms. In *Proceedings of the 23rd IEEE Conference on Computational Complexity*, pages 19–30, June 2008.

[C27] V. Guruswami and W. Machmouchi. Explicit interleavers for a Repeat Accumulate Accumulate (RAA) code construction. In *Proceedings of the International Symposium on Information Theory*, 2008.

[C28] V. Guruswami and A. Rudra. Concatenated codes can achieve list decoding capacity. In *Proceedings of 19th ACM-SIAM Symposium on Discrete Algorithms*, pages 258–267, January 2008.

[C29] V. Guruswami, J. Lee, and A. Razborov. Almost Euclidean sections of ℓ_1^n via expander codes. In *Proceedings of 19th ACM-SIAM Symposium on Discrete Algorithms*, pages 353–362, January 2008.

[C30] V. Guruswami and A. Rudra. Better binary list-decodable codes via multilevel concatenation. In *Proceedings of the 11th International Workshop on Approximation, Randomization, and Combinatorial Optimization: Algorithms and Techniques*, pages 554–568, 2007.

[C31] V. Guruswami, C. Umans, and S. P. Vadhan. Unbalanced expanders and randomness extractors from Parvaresh-Vardy codes. In *Proceedings of the 22nd IEEE Conference on Computational Complexity*, pages 96–108, 2007. Best paper award.

[C32] V. Guruswami and P. Raghavendra. A 3-query PCP over integers. In *Proceedings of the 39th Annual ACM Symposium on Theory of Computing*, pages 198–206, 2007.

[C33] J. Chuzhoy, V. Guruswami, S. Khanna, and K. Talwar. Hardness of routing with congestion in directed graphs. In *Proceedings of the 39th Annual ACM Symposium on Theory of Computing*, pages 165–178, 2007.

[C34] V. Guruswami. On 2-query codeword testing. In *Proceedings of 17th International Symposium on Algorithms and Computation*, pages 267–276, December 2006.

[C35] V. Guruswami and P. Raghavendra. Hardness of learning halfspaces with noise. In *Proceedings of the 47th Annual IEEE Symposium on Foundations of Computer Science (FOCS)*, pages 543–552, October 2006.

[C36] V. Guruswami and A. Patthak. Correlated Algebraic-Geometric codes: Improved list decoding over bounded alphabets. In *Proceedings of the 47th Annual IEEE Symposium on Foundations of Computer Science (FOCS)*, pages 227–238, October 2006.

[C37] V. Guruswami and A. Rudra. Explicit capacity-achieving list-decodable codes. In *Proceedings of the 38th Annual ACM Symposium on Theory of Computing (STOC)*, pages 1–10, May 2006.

[C38] V. Guruswami and V. Kabanets. Hardness amplification via space-efficient direct products. In *Proceedings of the 7th Latin American Symposium on Theoretical INformatics – LATIN*, volume 3887 of *Lecture Notes in Computer Science*, pages 556–568. Springer, March 2006.

[C39] P. Gopalan, V. Guruswami, and R. Lipton. Algorithms for modular counting of roots of multivariate polynomials. In *Proceedings of the 7th Latin American Symposium on Theoretical INformatics – LATIN*, volume 3887 of *Lecture Notes in Computer Science*, pages 544–555. Springer, March 2006.

[C40] I. Giotis and V. Guruswami. Correlation clustering with a fixed number of clusters. In *Proceedings of the 17th ACM-SIAM Symposium on Discrete Algorithms (SODA)*, pages 1167–1176, January 2006.

[C41] V. Guruswami and S. Vadhan. A lower bound on list size for list decoding. In *Proceedings of the 9th International Workshop on Randomization and Computation (RANDOM)*, pages 318–329, 2005.

[C42] V. Guruswami and L. Trevisan. The complexity of making unique choices: Approximating 1-in- k SAT. In *Proc. of the 8th International Workshop on Approximation Algorithms for Combinatorial Optimization Problems (APPROX)*, pages 99–110, 2005.

[C43] V. Guruswami and A. Rudra. Tolerant locally testable codes. In *Proceedings of the 9th International Workshop on Randomization and Computation (RANDOM)*, pages 306–317, 2005.

[C44] V. Guruswami and S. Khot. Hardness of Max 3SAT with no mixed clauses. In *Proceedings of the 20th IEEE Conference on Computational Complexity (CCC)*, pages 154–162, June 2005.

[C45] V. Guruswami and A. Rudra. Limits to list decoding Reed-Solomon codes. In *Proceedings of the 37th ACM Symposium on Theory of Computing (STOC)*, pages 602–609, May 2005.

[C46] V. Guruswami and A. Vardy. Maximum-Likelihood Decoding of Reed-Solomon codes is NP-hard. In *Proceedings of the 16th ACM-SIAM Symposium on Discrete Algorithms (SODA)*, pages 470–478, January 2005.

[C47] V. Guruswami, J. Hartline, A. Karlin, D. Kempe, C. Kenyon, and F. McSherry. On profit-maximizing envy-free pricing. In *Proceedings of the 16th ACM-SIAM Symposium on Discrete Algorithms (SODA)*, pages 1164–1173, January 2005.

[C48] V. Guruswami and P. Indyk. Linear-time list decoding in error-free settings. In *Proceedings of the 31st International Colloquium on Automata, Languages and Programming (ICALP)*, pages 695–707, July 2004.

[C49] V. Guruswami, D. Micciancio, and O. Regev. The complexity of the covering radius problem on lattices and codes. In *Proceedings of the 19th IEEE Conference on Computational Complexity (CCC)*, pages 161–173, June 2004.

[C50] V. Guruswami. Better extractors for better codes? In *Proceedings of 36th Annual ACM Symposium on Theory of Computing (STOC)*, pages 436–444, June 2004.

[C51] V. Guruswami and P. Indyk. Efficiently decodable codes meeting Gilbert-Varshamov bound for low rates. In *Proceedings of the 15th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA)*, pages 756–757, January 2004.

[C52] M. Charikar, V. Guruswami, and A. Wirth. Clustering with qualitative information. In *Proceedings of the 44th IEEE Symposium on Foundations of Computer Science (FOCS)*, pages 524–533, October 2003.

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[C54] V. Guruswami and P. Indyk. Linear-time encodable and list decodable codes. In *Proceedings of the 35th Annual ACM Symposium on Theory of Computing (STOC)*, pages 126–135, June 2003.

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