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CURRICULUM VITAE

Venkatesan Guruswami

April 2020

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Contents

1   Education

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, MA.

Ph.D., Computer Science	August 2001

Dissertation: List Decoding of Error-Correcting Codes
Winner, ACM Doctoral Dissertation Award, 2002.
<u>Advisor</u>: 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

Postdoctoral fellowship

MILLER RESEARCH FELLOW   Sept 2001 - Aug 2002
Miller Institute for Basic Research in Science
University of California, Berkeley, CA.

2   Academic Positions

Computer Science Department
Carnegie Mellon University, Pittsburgh, PA.

- DIRECTOR OF PH.D. PROGRAM   June 2019 - present
- PROFESSOR   July 2014 - present
- ASSOCIATE PROFESSOR (tenured)   July 2009 - June 2014
- VISITING ASSOCIATE PROFESSOR   Sept 2008 - June 2009

VISITING RESEARCHER   March-May 2018
Center for Mathematical Sciences and Applications, Harvard University.

VISIITNG PROFESSOR   July 2017-Feb 2018
School of Physical & Mathematical Sciences, Nanyang Technological University, Singapore.

VISITING RESEARCHER   January-June 2014
Microsoft Research New England.

MEMBER, SCHOOL OF MATHEMATICS   Sept 2007 - May 2008
Institute for Advanced Study, Princeton, NJ.

Department of Computer Science and Engineering
University of Washington, Seattle, WA.

- ASSOCIATE PROFESSOR (tenured; on leave)   Sept 2007 - June 2009
- ASSISTANT PROFESSOR   Sept 2002 - Sept 2007

3   Research Interests

I am broadly interested in Algorithms, Computational Complexity, and Coding/Information Theory. Specific areas of interest include error-correcting codes, approximation algorithms and hardness of approximation, probabilistically checkable proofs, explicit combinatorial constructions, the theory of pseudorandomness, computational and communication complexity, streaming and sub-linear computation, and algebraic algorithms.

4   Awards and Honors

IEEE Fellow, 2019.

ACM Fellow, 2017.

EATCS Presburger Award, 2012.

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 Madhu Sudan), 2000.

IBM Graduate Research Fellowship, 1999-2001.

AT&T Leadership Award, 1997

3rd position, Indian National Mathematical Olympiad, 1992.

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

National Talent Search Scholar, India, 1991.

5 Grants

[In reverse chronological order of award start date]

NSF CCF-1908125 (AF Small): The Polymorphic Gateway between Structure and Algorithms: Beyond CSP Dichotomy; 10/2019-09/2022, $399,997.

NSF CCF-1814603 (CIF Small): New coding techniques for synchronization errors; 10/2018-09/2020, $491,691 total, with coPI Bernhard Haeupler.

Google Research Award (in category: Algorithms and Optimization), 2017; $70,000.

NSF CCF-1563742 (CIF Medium): "Collaborative Research: Frontiers in coding for cloud storage systems"; 3/2016-2/2019, $400,000 (my share).

NSF CCF-1526092; (AF Small): "Approximate optimization: Algorithms, Hardness, and Integrality Gaps"; 9/2015-8/2018, $266,000.

NSF CCF-1422045 (CIF/AF Small): "Some fundamental complexity-inspired coding theory challenges"; 9/2014-8/2017, $515,912.

Microsoft Research-Carnegie Mellon Center for Computational Thinking: "Sparsity, Codes over Reals, and Quantum Information Theory"; 9/2012-8/2013, $60,000.

NSF CCF-1115525 (AF Small): "Some frontiers in the approximability of constraint satisfaction and related problems"; 9/2011-8/2016, $379,998.

MSR-CMU Center for Computational Thinking: "Next generation approximation algorithms and inapproximability?"; 9/2011-8/2012, $62,000.

MSR-CMU Center for Computational Thinking: "Codes for computationally bounded channels: Bridging Shannon and Hamming via computational thinking"; 1/2011-8/2011, $50,000.

NSF CCF-0963975 (AF Medium): "New directions in coding theory and pseudorandomness"; 9/2010-8/2016, $707,999.

US-Israel Binational Science Foundation (BSF) Grant 2008293 (coPI: Irit Dinur): "New directions in coding theory, PCPs, and local testing"; 8/2009-7/2013, $52,000 (my share)

NSF CDI grant 0953155 (with coPIs: Alexander Vardy and Xinmiao Zhang): "Realizing the ultimate potential of list error-correction: Theory, Practice, and Applications"; 9/2008-8/2011, $332,497 (my share)

David and Lucile Packard Fellowship in Science and Engineering, 2005 (one of 16 recipients); 11/2005-10/2014, $725,000.

Alfred P. Sloan Foundation Fellowship; 9/2005-8/2007, $45,000.

NSF CAREER Award CCF-0343672: "Error-correcting codes — List decoding and related algorithmic challenges"; 9/2004-8/2010, $400,000.

6 Professional activities

- **President**, Computational Complexity Foundation, June 2018-present.
- ArXiv moderator, cs.IT, April 2018-present.
- *Editor-in-Chief*, ACM Transactions on Computation Theory, Feb 2017-Dec 2019.
- Conference Program Committee Chair (Technical)

  - *TPC co-chair*, 2018 IEEE International Symposium on Information Theory.
  - *PC Chair*, 56th IEEE Conference on Foundations of Computer Science (FOCS 2015).
  - *PC Chair*, 27th IEEE Conference on Computational Complexity (CCC'12), June 2012.

- *Journal Editorial Boards*:

  - Journal of the ACM, 2015-present.
  - SIAM Journal on Computing, 2009-17.
  - Research in the Mathematical Sciences, 2016-present.
  - IEEE Transactions on Information Theory, 2010-2013.
  - ACM Transactions on Computation Theory, 2008-2015.

- Workshop/program organization

  - Co-organizer, Dagstuhl Seminar in June 2018 on The Constraint Satisfaction Problem: Complexity and Approximability.
  - Co-organizer, Workshop on Mathematics of Information-Theoretic Cryptography, Institute of Mathematical Science, National University of Singapore, September 2016.
  - Co-organizer, Program on Information Theory (Spring 2015 semester), Simons Institute for the Theory of Computing.
  - Co-organizer, Dagstuhl Seminar in July 2015 on The Constraint Satisfaction Problem: Complexity and Approximability.
  - Co-organizer, School and Workshop on Mathematics of Information-Theoretic Cryptography, Lorentz Center, Leiden, May 13-17 and May 21-25, 2013,
  - Co-organizer, Summer Thematic Program on Constraint Satisfaction, Fields Institute, Toronto, July-August 2011.

- Member, Board of Trustees and Awards Chair, Computational Complexity Foundation, Inc., August 2014-present.
- SIGACT executive committee member, July 2012-June 2015.
- Conference Steering Committee, IEEE Conference on Computational Complexity (CCC), July 2012-August 2014.
- Scientific board member, Electronic Colloquium on Computational Complexity, 2009-present.
- Area editor (Coding algorithms), Encyclopedia of Algorithms (published by Springer)
- Guest editorshop for journal special issues:

  - 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 FOCS 2002.

- Conference Program Committee memberships:

  (i) *FOCS 2019*, 60th Annual IEEE Symposium on Foundations of Computer Science, November 2019.
  (ii) *APPROX 2017*, 20th Intl. Workshop on Approximation Algorithms for Combinatorial Optimization Problems, August 2017.
  (iii) *STOC 2015*, 47th ACM Symposium on Theory of Computing, June 2015.
  (iv) *ISITA 2012*, International Symposium on Information Theory and its Applications, October 2012.
  (v) *ISIT 2012*, IEEE International Symposium on Information Theory, July 2012.
  (vi) *STOC 2011*, 43rd ACM Symposium on Theory of Computing, June 2011.
  (vii) *CCC 2010*, 25th IEEE Conference on Computational Complexity, June 2010.
  (viii) *SODA 2010*, ACM-SIAM Symposium on Discrete Algorithms, Janurary 2010.
  (ix) *FSTTCS 2008*, 28th Annual Conference on Foundations of Software Technology and Theoretical Computer Science, December 2008.
  (x) *STOC 2008*, 40th ACM Symposium on Theory of Computing, May 2008.
  (xi) *ITW 2008*, Information Theory Workshop, May 2008.
  (xii) *LATIN 2008*, 8th Latin American Theoretical Informatics Symposium, April 2008.
  (xiii) *CATS 2008*, Computing: The Australasian Theory Symposium, January 2008.
  (xiv) *APPROX 2007*, 10th Intl. Workshop on Approximation Algorithms for Combinatorial Optimization Problems, August 2007.
  (xv) *ISIT 2006*, IEEE International Symposium on Information Theory, July 2006.
  (xvi) *CCC 2006*, 21st IEEE Conference on Computational Complexity, July 2006.
  (xvii) *FOCS 2005*, 46th Annual IEEE Symposium on Foundations of Computer Science, October 2005.
  (xviii) *FSTTCS 2005*, 25th Annual Conference on Foundations of Software Technology and Theoretical Computer Science, December 2005.
  (xix) *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 Computing and Communication Foundations (CCF) and Division of Mathematical Sciences (DMS), various years.
- Reviewer of research proposals for Israel Science Foundation (ISF), various years.
- Reviewer of research proposals for United States-Israel Binational Science Foundation (BSF), various years.

7   Graduate student and postdoc supervision

Current Ph.D. students

- Jackson Abascal (co-advised with Pravesh Kothari)

- Peter Manohar

- Sai Sandeep Pallerla

- Nicolas Resch (expected graduation: May 2020)

- Andrii Riazanov

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 a 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 an Associate Professor at the University of California, Berkeley.

- Ali Kemal Sinop, May 2012.
  Dissertation title: *Graph partitioning and semidefinite programming hierarchies.*
  Ali Kemal is currently a faculty member at Nazarbayev University in Nur-Sultan (previously Astana), Kazakhstan.

- Yuan Zhou, August 2014.
  Dissertation title: *New Directions in Approximation Algorithms and Hardness of Approximation.*
  Yuan is currently an Assistant Professor of Industrial and Enterprise Systems Engineering at the University of Illinois at Urbana-Champaign.

- Carol Wang, September 2015.
  Dissertation title: *Beyond unique decoding: topics in error-correcting codes.*
  Carol was till recently a postdoc at the National University of Singapore.

- Ameya Velingker, August 2016.
  Dissertation title: *New Directions in Coding Theory: Capacity and Limitations*
  Ameya is currently a research scientist at Google.

- Euiwoong Lee, May 2017.
  Dissertation title: *Optimal Approximabilities beyond CSPs*
  Euiwoong is currently a postdoctoral fellow at New York University, and will start in Fall 2020 as an Assistant Professor at University of Michigan.

- Vijay Bhattiprolu, June 2019.
  Dissertation title: *On the Approximability of Injective Tensor Norm*
  Vijay is currently a postdoc at Princeton University and the Institute for Advanced Study, Princeton.

Postdocs

- Jonathan Mosheiff, Oct 2019-present.

- Mary Wootters, Sept 2014-July 2016.
  Current employment: Stanford University (Assistant Professor)

- Ankit Singh Rawat, Sept 2015-August 2016.
  Current employment: Research Scientist, Google (New York)

- Aravindan Vijayaraghavan (Simons postdoctoral fellow), Sept 2012-July 2014.
  Current employment: Northwestern University.

- Mahdi Cheraghchi, Sept 2011-June 2013.
  Current employment: University of Michigan (Assistant Professor)

- Krzysztof Onak (Simons postdoctoral fellow), Sept 2010-Aug 2012.
  Current employment: IBM T.J. Watson Research Center (Research scientist)

- Rishi Saket, Sept 2009-Aug 2010.
  Current employment: IBM Research India (Researcher)

- Parikshit Gopalan, March 2007-June 2008.
  Current employment: VMWare Research (Research scientist)

8 Selected invited talks/lecture series

(since 2010)

T1) "Arıkan meets Shannon: Polar codes with near-optimal convergence to channel capacity," TCS-plus seminar series, April 2020.

T2) "Sub-packetization of Minimum Storage Regenerating codes: A lower bound and a work-around," Google Research, Mountain View, August 2019.

T3) "The polymorphic gateway between structure and algorithms: Constraint Satisfaction and Beyond," TCS-IITM Colloquium, Indian Institute of Technology Madras, March 2019.

T4) "Sub-packetization of Minimum Storage Regenerating codes: A lower bound and a work-around", Theory seminar, Stanford University, February 2019.

T5) "Solving a linear system with a global congruency constraint," Institute of Mathematical Sciences, Chennai, India, January 2019.

T6) "Algebraic CSP dichotomy theorem: A polymorphic gateway between structure and algorithms," Plenary lecture, Oberwolfach Complexity Theory meeting, Mathematisches Forschungsinstitut Oberwolfach, November 2018.

T7) "Lossless dimension expanders," Oberwolfach Complexity Theory meeting, Mathematisches Forschungsinstitut Oberwolfach, November 2018.

T8) "The polymorphic gateway between structure and algorithms: CSPs and beyond," Distinguished Lecture, Department of Computer Science, University of Illinois at Urbana-Champaign, October 2018.

T9) "The polymorphic gateway between structure and algorithms: Beyond CSPs," Algorithms and Randomness Center Colloquium, Georgia Tech, December 2018.

T10) "How many deleted bits can one recover?", Georgia Tech undergraduate "big-O" theory club, December 2018.

T11) "Polymorphic inquiries: (Promise) constraint satisfaction, fine-grained complexity, and more," Lecture series (5×1.5 hours), Institute of Mathematical Sciences, Chennai, India, July-August 2018.

T12) "Improved bounds for perfect hashing," MIT Algorithms and Complexity seminar, May 2018.

T13) "Polymorphisms beget algorithms: Promise CSP, fine-grained complexity, and more," 3 hour lecture, Harvard University (Center of Mathematical Sciences and Applications), May 2018.

T14) "Ta-Shma's explicit construction of near optimal low-rate binary codes," 3 hour lecture, Harvard University (Center of Mathematical Sciences and Applications), March 2018.

T15) "A lower bound for maximally recoverable codes with locality," CQT, National University of Singapore, February 2018.

T16) "Promise Constraint Satisfaction," CQT, National University of Singapore, Janurary 2018.

T17) "Subspace evasion, list decoding, and dimension expanders," Harvard CMSA workshop on algebraic methods in combinatorics, Nov 2017.

T18) "Promise Constraint Satisfaction," MIT Theory Colloquium, Nov 2017.

T19) "Progress in Error-Correction: A Survey," Mathematics Colloquium, Nanyang Technological University, September 2017.

T20) "Linear-algebraic pseudorandomness: Subspace designs and dimension expanders," Simons Institute Workshop on Proving and Using Pseudorandomness, Berkeley, March 2017.

T21) "Progress in error-correction: New codes for old noise models," Distinguished Lecture Series, School of Computer and Communication Sciences, École Polytechnique Fédérale de Lausanne, November 2016.

T22) "$(2 + \epsilon)$-SAT is NP-hard, and further results on promise constraint satisfaction," Krannert School of Management Speaker Series, Purdue University, November 2016.

T23) "Progress in error-correction: New codes for old noise models," Distinguished Lecture Series, College of Information and Computer Sciences, University of Massachusetts, Amherst, October 2016.

T24) "Repairing Reed-Solomon codes," Dagstuhl seminar on Coding Theory in the time of big data, August 2016.

T25) "Recent progress on codes for worst-case deletions," ICERM Workshop on Algorithmic Coding Theory, June 2016.

T26) "An Improved Bound on the Fraction of Correctable Deletions," Simons Institute Information Theory reunion workshop, June 2016.

T27) "Analysis of polymorphisms and promise constraint satisfaction," Simons Symposium on Analysis of Boolean Functions, Schloss Elmau, April 2016.

T28) "Coloring low-discrepancy hypergraphs, Weak Polymorphisms, and Promise Constraint Satisfaction," NII Shonan Meeting on Current Trends in Combinatorial Optimization, April 2016.

T29) "Recent progress on codes for worst-case deletions," Algorithms and Computation Theory Seminar, University of Texas at Austin, February 2016.

T30) "Repairing Reed-Solomon Codes," Oberwolfach Complexity Theory Meeting, November 2015.

T31) "Progress in error-correction: New codes for old noise models," EECS Distinguished Speaker Series, Northwestern Universty, October 2015.

T32) "Progress in error-correction: New codes for old noise models," ECE Colloquium, University of Illinois at Urbana-Champaign, October 2015.

T33) "List and local error-correction," 8th North American School of Information Theory, 3 hour tutorial, August 10-13, 2015.

T34) "Advances in Error-correction: List decoding and polar coding," Swedish Summer School in Computer Science, Five 2.5 hour lectures, June 28-July 4, 2015.

T35) "Communication with Imperfectly Shared Randomness," Banff workshop on Communication Complexity and Applications: August 2014.

T36) "Reed-Muller testing: implications for small set expansion & hypergraph coloring," Bertinoro Workshop on Sublinear Algorithms, Bertinoro, Italy: May 2014.

T37) "Polar codes: Reliable communication with complexity scaling polynomially in the gap to Shannon capacity," Invited talk, New York area Theory Day, Columbia University: April 2014.

T38) "Polar codes: Reliable communication with complexity polynomial in the gap to Shannon capacity," Coding Theory Workshop, AUB Center for Advanced Mathematical Sciences, Beirut, Lebanon: April 2014.

T39) "List error-correction with information-theoretically minimal redundancy," 3 hour invited lecture, 2014 IEEE European School of Information Theory, Tallinn, Estonia: April 2014.

T40) "Superlinear lower bounds for multipass graph processing," Brown ICERM Theory Seminar: April 2014.

T41) "Polar codes: Reliable communication with complexity polynomial in the gap to Shannon capacity," Invited talk at 33rd Conference on Foundations of Software Technology and Theoretical Computer Science (FSTTCS), Guwahati, India: December 2013.

T42) "List decoding by evading subspaces," 3 hour lecture, Microsoft Research New England/MIT theory reading group: February 2014.

T43) "Polar codes: Reliable communication with complexity scaling polynomially in the gap to Shannon capacity," MIT Theory Colloquium: February 2014.

T44) Simons Symposium on New Approaches in Approximation Algorithms for NP-hard problems, "Rounding Lasserre SDPs using column selection for spectrum-based guarantees," February 2013.

T45) University of Warsaw, Phdopen lectures, "Algorithmic coding theory: Some recent advances," 7 hours of lectures, November 2012.

T46) University of Maryland, Invited lecture in theory day, "Linear-algebraic list decoding and subspace-evasive sets," October 2012.

T47) Tsinghua-MIT-CUHK Research Center Workshop on Theoretical Computer Science, "Lasserre hierarchy, higher eigenvalues, and graph partitioning," July 2012.

T48) Presburger Award lecture, ICALP 2012, "List decoding and pseudorandomness: A web of connections," July 2012.

T49) Institute for Advanced Study, CSDM seminar, "Lasserre hierarchy, higher eigenvalues, and graph partitioning," Feb 2012.

T50) Charles University, KAM Mathematical Colloquium, "List error-correction algorithms: A survey," Nov 2011.

T51) Chennai Mathematical Institute, Workshop on Pseudorandomness, 4 lectures on algebraic list decoding, locally decodable codes, and related pseudorandomness, August 2011.

T52) Princeton center for computational intractability, Workshop on Approximation Algorithms: The Last Decade and the Next, " PCPs and Inapproximability: Recent Milestones, and New and Continuing Challenges," June 2011.

T53) MIT Theory Colloquium, "Bridging Shannon and Hamming: Codes for computationally simple channels," March 2011.

T54) Institut Henri Poincare, Workshop on Metric embeddings, algorithms and hardness of approximation, "Bypassing UGC: Inapproximability of Subspace Approximation," January 2011.

T55) Weizmann Institute, Walmart Lecture Series in Cryptography and Complexity, "Bridging Shannon and Hamming: Codes for computationally simple channels," December 2010.

T56) 3rd Eastern Great Lakes Theory of Computation Workshop, University at Buffalo, "Bridging Shannon and Hamming: Codes for computationally simple channels," October 2010.

T57) Koetterfest, Workshop on Facets of Coding Theory: from Algorithms to Networks,"On the list-decodability of random linear codes," September 2010.

T58) ICM 2010 Satellite Conference On Algebraic and Probabilistic Aspects of Combinatorics and Computing, "List-decodability of random linear codes," August 2010.

T59) International Congress of Mathematicians (ICM), Invited sectional talk (Mathematical aspects of Computer Science), "Bridging Shannon and Hamming: List Error-Correction with Optimal Rate," August 2010.

9 Publications

9.1 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).

9.2 Journal Publications

[J1] V. Guruswami and S. Sandeep. Rainbow coloring hardness via low sensitivity polymorphisms. *SIAM J. Disc. Math.*, 2020. To appear.

[J2] V. Guruswami, L. Jin, and C. Xing. Constructions of maximally recoverable local reconstruction codes via function fields. *IEEE Trans. Inf. Theory*, 2020. To appear.

[J3] V. Guruswami and R. Li. Coding against deletions in oblivious and online models. *IEEE Trans. Inf. Theory*, 66(4):2352–2374, 2020.

[J4] M. Dalai, V. Guruswami, and J. Radhakrishnan. An improved bound on the zero-error list-decoding capacity of the 4/3 channel. *IEEE Trans. Information Theory*, 66(2):749–756, 2020.

[J5] V. Guruswami and R. Li. Polynomial time decodable codes for the binary deletion channel. *IEEE Trans. Information Theory*, 65(4):2171–2178, 2019.

[J6] V. Guruswami, C. Xing, and C. Yuan. How long can optimal locally repairable codes be? *IEEE Trans. Information Theory*, 65(6):3662–3670, 2019.

[J7] A. S. Rawat, I. Tamo, V. Guruswami, and K. Efremenko. MDS code constructions with small sub-packetization and near-optimal repair bandwidth. *IEEE Trans. Information Theory*, 64(10):6506–6525, 2018.

[J8] J. Brakensiek, V. Guruswami, and S. Zbarsky. Efficient low-redundancy codes for correcting multiple deletions. *IEEE Trans. on Information Theory*, 64(5):3403–3410, 2018.

[J9] V. Guruswami and E. Lee. Strong inapproximability results on balanced rainbow-colorable hypergraphs. *Combinatorica*, 38(3):547–599, 2018.

[J10] V. Guruswami, C. Xing, and C. Yuan. Constructions of subspace designs via algebraic function fields. *Transactions of the AMS*, 2018.

[J11] V. Guruswami and E. Lee. Inapproximability of H-transversal/packing. *SIAM J. Discrete Math.*, 31(3):1552–1571, 2017.

[J12] V. Guruswami and M. Wootters. Repairing Reed-Solomon codes. *IEEE Trans. Information Theory*, 63(9):5684–5698, 2017.

[J13] P. Austrin, V. Guruswami, and J. Håstad. $(2 + \epsilon)$-SAT is NP-hard. *SIAM Journal on Computing*, 46(5):1554–1573, 2017.

[J14] C. L. Canonne, V. Guruswami, R. Meka, and M. Sudan. Communication with imperfectly shared randomness. *IEEE Trans. Information Theory*, 63(10):6799–6818, 2017.

[J15] V. Guruswami and E. Lee. Towards a characterization of approximation resistance for symmetric CSPs. *Theory of Computing*, 13(1):1–24, 2017.

[J16] B. Bukh, V. Guruswami, and J. Håstad. An improved bound on the fraction of correctable deletions. *IEEE Transactions on Information Theory*, 63(1):93–103, 2017.

[J17] V. Guruswami and C. Wang. Deletion codes in the high-noise and high-rate regimes. *IEEE Trans. Information Theory*, 63(4):1961–1970, 2017.

[J18] V. Guruswami and E. Lee. Nearly optimal NP-hardness of unique coverage. *SIAM J. Comput.*, 46(3):1018–1028, 2017.

[J19] V. Guruswami, L. Jin, and C. Xing. Efficiently list-decodable punctured reed-muller codes. *IEEE Trans. Information Theory*, 63(7):4317–4324, 2017.

[J20] V. Guruswami, P. Harsha, J. Håstad, S. Srinivasan, and G. Varma. Super-polylogarithmic hypergraph coloring hardness via low-degree long codes. *SIAM J. Comput.*, 46(1):132–159, 2017.

[J21] M. Cheraghchi and V. Guruswami. Non-malleable coding against bit-wise and split-state tampering. *Journal of Cryptology*, 30(1):191–241, 2017.

[J22] V. Guruswami and A. Smith. Optimal rate code constructions for computationally simple channels. *Journal of the ACM*, 63(4):35:1–35:37, 2016.

[J23] V. Guruswami, C. Wang, and C. Xing. Explicit list-decodable rank-metric and subspace codes via subspace designs. *IEEE Trans. Information Theory*, 62(5):2707–2718, 2016.

[J24] V. Guruswami and E. Lee. Simple proof of hardness of Feedback Vertex Set. *Theory of Computing*, 12(6):1–11, 2016.

[J25] V. Guruswami and K. Onak. Superlinear lower bounds for multipass graph processing. *Algorithmica*, 76(3):654–683, 2016.

[J26] V. Guruswami and E. Lee. Complexity of approximating CSP with balance / hard constraints. *Theory Comput. Syst.*, 59(1):76–98, 2016.

[J27] M. Cheraghchi and V. Guruswami. Capacity of non-malleable codes. *IEEE Transactions on Information Theory*, 62(3):1097–1118, 2016.

[J28] V. Guruswami and S. Kopparty. Explicit subspace designs. *Combinatorica*, 36(2):161–185, 2016.

[J29] V. Guruswami, P. Raghavendra, R. Saket, and Y. Wu. Bypassing UGC from some optimal geometric inapproximability results. *ACM Trans. Algorithms*, 12(1):6, 2016.

[J30] I. Dinur and V. Guruswami. PCPs via low-degree long code and hardness for constrained hypergraph coloring. *Israel Journal of Mathematics*, 209(2):611–649, 2015.

[J31] V. Guruswami and C. Xing. Optimal rate algebraic list decoding using narrow ray class fields. *J. Comb. Theory, Ser. A*, 129:160–183, 2015.

[J32] V. Guruswami and P. Xia. Polar codes: Speed of polarization and polynomial gap to capacity. *IEEE Transactions on Information Theory*, 61(1):3–16, 2015.

[J33] V. Guruswami, S. Sachdeva, and R. Saket. Inapproximability of minimum vertex cover on k-uniform k-partite hypergraphs. *SIAM Journal on Discrete Mathematics*, 29(1):36–58, 2015.

[J34] V. Guruswami, A. K. Sinop, and Y. Zhou. Constant factor Lasserre integrality gaps for graph partitioning problems. *SIAM Journal on Optimization*, 24(4):1698–1717, 2014.

[J35] V. Guruswami and S. Narayanan. Combinatorial limitations of average-radius list-decoding. *IEEE Transactions on Information Theory*, 60(10):5827–5842, 2014.

[J36] M. Cheraghchi, V. Guruswami, and A. Velingker. Restricted isometry of Fourier matrices and list decodability of random linear codes. *SIAM Journal on Computing*, 42(5):1888–1914, 2013.

[J37] V. Guruswami and C. Wang. Linear-algebraic list decoding for variants of Reed-Solomon codes. *IEEE Transactions on Information Theory*, 59(6):3257–3268, 2013.

[J38] V. Guruswami and A. K. Sinop. Improved inapproximability results for maximum *k*-colorable subgraph. *Theory of Computing*, 9(11):413–435, 2013.

[J39] V. Guruswami and Y. Zhou. Tight bounds on the approximability of almost-satisfiable horn sat and exact hitting set. *Theory of Computing*, 8(1):239–267, 2012.

[J40] V. Feldman, V. Guruswami, P. Raghavendra, and Y. Wu. Agnostic learning of monomials by halfspaces is hard. *SIAM J. Comput.*, 41(6):1558–1590, 2012.

[J41] P. Gopalan, V. Guruswami, and P. Raghavendra. List decoding tensor products and interleaved codes. *SIAM Journal on Computing*, 40(5):1432–1462, 2011.

[J42] A. Chakrabarti, V. Guruswami, A. Wirth, and A. Wirth. The query complexity of estimating weighted averages. *Acta Inf.*, 48(7-8):417–426, 2011.

[J43] 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.

[J44] 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).

[J45] 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.

[J46] 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.

[J47] V. Guruswami and S. Vadhan. A lower bound on list size for list decoding. *IEEE Transactions on Information Theory*, 56(11):5681–5688, 2010.

[J48] 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.

[J49] 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.

[J50] V. Guruswami. Cyclotomic function fields, Artin-Frobenius automorphisms, and list error-correction with optimal rate. *Algebra and Number Theory*, 4(4):433–463, 2010.

[J51] V. Guruswami, J. Lee, and A. Razborov. Almost Euclidean sections of ℓ_1^n via expander codes. *Combinatorica*, 30(1):47–68, 2010.

[J52] 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.

[J53] 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.

[J54] V. Guruswami and P. Raghavendra. Hardness of learning halfspaces with noise. *SIAM Journal on Computing*, 39(2):742–765, 2009.

[J55] V. Guruswami, C. Umans, and S. Vadhan. Unbalanced expanders and randomness extractors from Parvaresh-Vardy codes. *Journal of the ACM*, 56(4), 2009.

[J56] 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.

[J57] V. Guruswami and A. Rudra. Better binary list-decodable codes via multilevel concatenation. *IEEE Transactions on Information Theory*, 55(1):19–26, January 2009.

[J58] V. Guruswami and V. Kabanets. Hardness amplification via space-efficient direct products. *Computational Complexity*, 17(4):475–500, December 2008.

[J59] 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.

[J60] V. Guruswami and A. Patthak. Correlated Algebraic-Geometric codes: Improved list decoding over bounded alphabets. *Mathematics of Computation*, 77(261):447–473, January 2008.

[J61] P. Gopalan, V. Guruswami, and R. Lipton. Algorithms for modular counting of roots of multivariate polynomials. *Algorithmica*, 50(4):479–496, 2008.

[J62] 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.

[J63] I. Giotis and V. Guruswami. Correlation clustering with a fixed number of clusters. *Theory of Computing*, 2(13):249–266, 2006.

[J64] V. Guruswami and A. Rudra. Limits to list decoding Reed-Solomon codes. *IEEE Transactions on Information Theory*, 52(8):3642–3649, August 2006.

[J65] 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.

[J66] 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.

[J67] 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.

[J68] 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).

[J69] 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.

[J70] 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.

[J71] L. Engebretsen and V. Guruswami. Is constraint satisfaction over two variables always easy? *Random Structures and Algorithms*, 25(2):150–178, September 2004.

[J72] 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.

[J73] V. Guruswami. List decoding from erasures: Bounds and code constructions. *IEEE Transactions on Information Theory*, 49(11):2826–2833, 2003.

[J74] V. Guruswami. Inapproximability results for set splitting and satisfiability problems with no mixed clauses. *Algorithmica*, 38(3):451–469, December 2003.

[J75] 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.

[J76] V. Guruswami. Constructions of codes from number fields. *IEEE Transactions on Information Theory*, 49(3):594–603, 2003.

[J77] V. Guruswami, J. Håstad, and M. Sudan. Hardness of approximate hypergraph coloring. *SIAM Journal on Computing*, 31(6):1663–1686, 2002.

[J78] 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.

[J79] V. Guruswami, J. Håstad, M. Sudan, and D. Zuckerman. Combinatorial bounds for list decoding. *IEEE Transactions on Information Theory*, 48(5):1021–1035, 2002.

[J80] 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.

[J81] V. Guruswami and M. Sudan. On representations of Algebraic-geometric codes for list decoding. *IEEE Transactions on Information Theory*, 47(4):1610–1613, 2001.

[J82] V. Guruswami and C. P. Rangan. Algorithmic aspects of clique-transversal and clique-independent sets. *Discrete Applied Mathematics*, 100(3):183–202, 2000.

[J83] V. Guruswami and M. Sudan. Improved decoding of Reed-Solomon and Algebraic-geometric codes. *IEEE Transactions on Information Theory*, 45(6):1757–1767, 1999.

[J84] V. Guruswami. Enumerative aspects of certain classes of perfect graphs. *Discrete Mathematics*, 205:97–117, 1999.

[J85] V. Guruswami. Maximum cut on line and total graphs. *Discrete Applied Mathematics*, 92:217–221, 1999.

[J86] 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.

[J87] 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.

[J88] 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.

9.3 Refereed conference publications

[C1] V. Guruswami, A. Riazanov, and M. Ye. Arikan meets Shannon: Polar codes with near-optimal convergence to channel capacity. In *Proceedings of the 52nd ACM Symposium on Theory of Computing*, 2020. To appear.

[C2] V. Guruswami, B. Haeupler, and A. Shahrasbi. Optimally resilient codes for list-decoding from insertions and deletions. In *Proceedings of the 52nd ACM Symposium on Theory of Computing*, 2020. To appear.

[C3] V. Guruswami and S. Sandeep. d-to-1 hardness of coloring 3-colorable graphs with $O(1)$ colors. In *47th International Colloquium on Automata, Languages, and Programming*, 2020. To appear.

[C4] F. Lin, M. Cheraghchi, V. Guruswami, R. Safavi-Naini, and H. Wang. Leakage-resilient secret sharing in non-compartmentalized models. In *Information-Theoretic Cryptography*, 2020. To appear.

[C5] J. Brakensiek and V. Guruswami. Symmetric polymorphisms and efficient decidability of promise CSPs. In *Proceedings of the 31st Annual ACM-SIAM Symposium on Discrete Algorithms*, pages 297–304, 2020.

[C6] V. Guruswami and S. Sandeep. Rainbow coloring hardness via low sensitivity polymorphisms. In *Approximation, Randomization, and Combinatorial Optimization. Algorithms and Techniquesm (APPROX)*, pages 15:1–15:17, 2019.

[C7] V. Guruswami and R. Tao. Streaming hardness of unique games. In *Approximation, Randomization, and Combinatorial Optimization. Algorithms and Techniquesm (APPROX)*, pages 5:1–5:12, 2019.

[C8] V. Guruswami and A. Riazanov. Beating Fredman-Komlós for perfect k-hashing. In *46th International Colloquium on Automata, Languages, and Programming*, pages 92:1–92:14, 2019.

[C9] V. Guruswami, L. Jin, and C. Xing. Constructions of maximally recoverable local reconstruction codes via function fields. In *46th International Colloquium on Automata, Languages, and Programming*, pages 68:1–68:14, 2019.

[C10] V. Guruswami and H. Jiang. Near-optimal repair of Reed-Solomon codes with low sub-packetization. In *IEEE International Symposium on Information Theory*, pages 1077–1081, 2019.

[C11] O. Alrabiah and V. Guruswami. An exponential lower bound on the sub-packetization of MSR codes. In *Proceedings of the 51st Annual ACM Syposium on Theory of Computing*, pages 979–985, 2019.

[C12] J. Brakensiek and V. Guruswami. Bridging between 0/1 and linear programs via random walks. In *Proceedings of the 51st Annual ACM Syposium on Theory of Computing*, pages 568–577, 2019.

[C13] J. Brakensiek, S. Gopi, and V. Guruswami. CSPs with global modular constraints: Algorithms and hardness via polynomial representations. In *Proceedings of the 51st Annual ACM Syposium on Theory of Computing*, pages 590–601, 2019.

[C14] V. Guruswami, P. Nakkiran, and M. Sudan. Algorithmic polarization for hidden markov models. In *10th Innovations in Theoretical Computer Science Conference*, pages 39:1–39:19, 2019.

[C15] F. Lin, M. Cheraghchi, V. Guruswami, R. Safavi-Naini, and H. Wang. Secret sharing with binary shares. In *10th Innovations in Theoretical Computer Science Conference*, pages 53:1–53:20, 2019.

[C16] J. Brakensiek and V. Guruswami. An algorithmic blend of LPs and ring equations for promise CSPs. In *Proceedings of the 30th Annual ACM-SIAM Symposium on Discrete Algorithms*, pages 436–455, 2019.

[C17] V. V. S. P. Bhattiprolu, M. Ghosh, V. Guruswami, E. Lee, and M. Tulsiani. Approximability of p → q matrix norms: Generalized Krivine rounding and hypercontractive hardness. In *Proceedings of the 30th Annual ACM-SIAM Symposium on Discrete Algorithms*, pages 1358–1368, 2019.

[C18] S. Gopi, V. Guruswami, and S. Yekhanin. Maximally recoverable LRCs: A field size lower bound and constructions for few heavy parities. In *Proceedings of the 30th Annual ACM-SIAM Symposium on Discrete Algorithms*, pages 2154–2170, 2019.

[C19] V. Guruswami, C. Xing, and C. Yuan. How long can optimal locally repairable codes be? In *Proceedings of the 22nd International Conference on Randomization and Computation*, pages 41:1–41:11, 2018.

[C20] J. Blasiok, V. Guruswami, and M. Sudan. Polar codes with exponentially small error at finite block length. In *Prooceedings of the 22nd International Conference on Randomization and Computation*, pages 34:1–34:17, 2018.

[C21] V. Guruswami, N. Resch, and C. Xing. Lossless dimension expanders via linearized polynomials and subspace designs. In *Proceedings of the 33rd Computational Complexity Conference*, pages 4:1–4:16, 2018.

[C22] V. Guruswami and N. Resch. On the list-decodability of random linear rank-metric codes. In *Proceedings of the IEEE International Symposium on Information Theory*, pages 1505–1509, 2018.

[C23] V. Guruswami, S. Lokam, and S. Vikneshwar. epsilon-msr codes: Contacting fewer code blocks for exact repair. In *Proceedings of the IEEE International Symposium on Information Theory*, pages 2371–2375, 2018.

[C24] J. Blasiok, V. Guruswami, P. Nakkiran, A. Rudra, and M. Sudan. General strong polarization. In *Proceedings of the 50th Annual ACM Syposium on Theory of Computing*, pages 485–492, 2018.

[C25] J. Brakensiek and V. Guruswami. Promise constraint satisfaction: Structure theory and a symmetric boolean dichotomy. In *Proceedings of the 28th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA)*, pages 1782–1801, 2018. Full version available as ECCC Technical Report TR16-183 at http://eccc.hpi-web.de/report/2016/183.

[C26] V. Guruswami and R. Li. Coding against deletions in oblivious and online models. In *Proceedings of the 28th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA)*, pages 625–643, 2018.

[C27] V. V. S. P. Bhattiprolu, M. Ghosh, V. Guruswami, E. Lee, and M. Tulsiani. Weak decoupling, polynomial folds, and approximate optimization over the sphere. In *Proceedings of the 58th Annual Symposium on Foundations of Computer Science*, pages 1008–1019, 2017.

[C28] V. Guruswami, A. Velingker, and S. Velusamy. Streaming complexity of approximating max 2csp and max acyclic subgraph. In *20th International Workshop on Approximation Algorithms for Combinatorial Optimization Problems (APPROX)*, pages 8:1–8:19, 2017.

[C29] J. Brakensiek and V. Guruswami. The quest for strong inapproximability results with perfect completeness. In *20th International Workshop on Approximation Algorithms for Combinatorial Optimization Problems (APPROX)*, pages 4:1–4:20, 2017.

[C30] V. Guruswami and R. Li. Efficiently decodable codes for the binary deletion channel. In *Proceedings of the 21st International Workshop on Randomization and Computation (RANDOM)*, pages 47:1–47:13, 2017.

[C31] S. L. Frank-Fischer, V. Guruswami, and M. Wootters. Locality via partially lifted codes. In *Proceedings of the 21st International Workshop on Randomization and Computation (RANDOM)*, pages 43:1–43:17, 2017.

[C32] V. V. S. P. Bhattiprolu, V. Guruswami, and E. Lee. Sum-of-squares certificates for maxima of random tensors on the sphere. In *Proceedings of the 21st International Workshop on Randomization and Computation (RANDOM)*, pages 31:1–31:20, 2017.

[C33] V. Guruswami, C. Xing, and C. Yuan. Subspace designs based on algebraic function fields. In *44th International Colloquium on Automata, Languages, and Programming*, pages 86:1–86:10, 2017.

[C34] M. Dalai, V. Guruswami, and J. Radhakrishnan. An improved bound on the zero-error list-decoding capacity of the 4/3 channel. In *Proceedings of the IEEE International Symposium on Information Theory*, pages 1658–1662, 2017.

[C35] A. S. Rawat, I. Tamo, V. Guruswami, and K. Efremenko. epsilon-MSR codes with small subpacketization. In *Proceedings of the IEEE International Symposium on Information Theory*, pages 2043–2047, 2017.

[C36] V. Guruswami and A. S. Rawat. MDS code constructions with small sub-packetization and near-optimal repair bandwidth. In *Proceedings of the 27th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA)*, pages 2109–2122, 2017.

[C37] V. Guruswami and D. Zuckerman. Robust Fourier and polynomial curve fitting. In *Proceedings of the 57th Annual IEEE Symposium on Foundations of Computer Science (FOCS)*, pages 751–759, 2016.

[C38] V. Guruswami and R. Li. Efficiently decodable insertion/deletion codes for high-noise and high-rate regimes. In *Proceedings of the 2016 IEEE International Symposium on Information Theory*, pages 620–624, 2016.

[C39] V. Guruswami and M. Wootters. Repairing Reed-Solomon codes. In *Proceedings of the 48th Annual ACM Symposium on Theory of Computing (STOC)*, pages 216–226, 2016.

[C40] J. Brakensiek and V. Guruswami. New hardness results for graph and hypergraph colorings. In *Proceeding of the 31st Computational Complexity Conference (CCC)*, pages 14:1–14:27, 2016.

[C41] V. Guruswami and J. Radhakrishnan. Tight bounds for communication assisted agreement distillation. In *Proceeding of the 31st Computational Complexity Conference (CCC)*, pages 6:1–6:17, 2016.

[C42] B. Bukh and V. Guruswami. An improved bound on the fraction of correctable deletions. In *Proceedings of the 26th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA)*, pages 1893–1901, 2016.

[C43] J. Brakensiek, V. Guruswami, and S. Zbarsky. Efficient low-redundancy codes for correcting multiple deletions. In *Proceedings of the 26th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA)*, pages 1884–1892, 2016.

[C44] V. Guruswami and E. Lee. Nearly optimal NP-hardness of unique coverage. In *Proceedings of the 26th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA)*, pages 1724–1730, 2016.

[C45] V. Guruswami and C. Wang. Deletion codes in the high-noise and high-rate regimes. In *Proceedings of the 19th International Workshop on Randomization and Computation (RANDOM)*, pages 867–880, 2015.

[C46] M. A. Forbes and V. Guruswami. Dimension expanders via rank condensers. In *Proceedings of the 19th International Workshop on Randomization and Computation (RANDOM)*, pages 800–814, 2015.

[C47] V. Guruswami and E. Lee. Inapproximability of H-transversal/packing. In *Proceedings of 18th International Workshop on Approximation Algorithms for Combinatorial Optimization Problems (APPROX)*, pages 284–304, 2015.

[C48] V. V. S. P. Bhattiprolu, V. Guruswami, and E. Lee. Approximate hypergraph coloring under low-discrepancy and related promises. In *Proceedings of 18th International Workshop on Approximation Algorithms for Combinatorial Optimization Problems (APPROX)*, pages 152–174, 2015.

[C49] V. Guruswami and E. Lee. Towards a characterization of approximation resistance for symmetric CSPs. In *Proceedings of 18th International Workshop on Approximation Algorithms for Combinatorial Optimization Problems (APPROX)*, pages 305–322, 2015.

[C50] V. Guruswami and A. Velingker. An entropy sumset inequality and polynomially fast convergence to Shannon capacity over all alphabets. In *Proceedings of 30th Conference on Computational Complexity*, pages 42–57, 2015.

[C51] C. Canonne, V. Guruswami, R. Meka, and M. Sudan. Communication with imperfectly shared randomness. In *Proceedings of the 6th Innovations in Theoretical Computer Science (ITCS) conference*, pages 257–262, 2015.

[C52] V. Guruswami and E. Lee. Strong inapproximability results on balanced rainbow-colorable hypergraphs. In *Proceedings of the ACM-SIAM Symposium on Discrete Algorithms*, pages 822–836, 2015.

[C53] V. Guruswami, M. Sudan, A. Velingker, and C. Wang. Limitations on testable affine-invariant codes in the high-rate regime. In *Proceedings of the ACM-SIAM Symposium on Discrete Algorithms*, pages 1312–1325, 2015.

[C54] P. Austrin, V. Guruswami, and J. Håstad. $(2 + \epsilon)$-SAT is NP-hard. In *Proceedings of the 55th Annual Symposium on Foundations of Computer Science (FOCS)*, pages 1–10, October 2014.

[C55] V. Guruswami and C. Wang. Evading subspaces over large fields and explicit list-decodable rank-metric codes. In *Proceedings of the 18th International Workshop on Randomization and Computation*, pages 748–761, September 2014.

[C56] V. Guruswami and C. Xing. Hitting sets for low-degree polynomials with optimal density. In *Proceedings of the 29th IEEE Conference on Computational Complexity (CCC)*, pages 161–168, 2014.

[C57] V. Guruswami, P. Harsha, J. Håstad, S. Srinivasan, and G. Varma. Super-polylogarithmic hypergraph coloring hardness via low-degree long codes. In *Proceedings of the 46th ACM Symposium on Theory of Computing (STOC)*, pages 614–623, 2014.

[C58] M. Cheraghchi and V. Guruswami. Non-malleable coding against bit-wise and split-state tampering. In *Proceedings of the 11th Theory of Cryptography Conference (TCC)*, pages 440–464, February 2014.

[C59] V. Guruswami and E. Lee. Complexity of approximating CSP with balance/hard constraints. In *Proceedings of the 5th Innovations in Theoretical Computer Science (ITCS) conference*, pages 439–448, January 2014.

[C60] M. Cheraghchi and V. Guruswami. Capacity of Non-Malleable Codes. In *Proceedings of the 5th Innovations in Theoretical Computer Science (ITCS) conference*, pages 155–168, January 2014.

[C61] V. Guruswami and C. Xing. Optimal rate list decoding of folded algebraic-geometric codes over constant-sized alphabets. In *Proceedings of the 25th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA)*, pages 1858–1866, January 2014.

[C62] V. Guruswami and P. Xia. Polar codes: Speed of polarization and polynomial gap to capacity. In *Proceedings of the 54th Annual Symposium on Foundations of Computer Science (FOCS)*, pages 310–319, October 2013.

[C63] I. Dinur and V. Guruswami. PCPs via low-degree long code and hardness for constrained hypergraph coloring. In *Proceedings of the 54th Annual Symposium on Foundations of Computer Science (FOCS)*, pages 340–349, October 2013.

[C64] V. Guruswami and S. Kopparty. Explicit subspace designs. In *Proceedings of the 54th Annual Symposium on Foundations of Computer Science (FOCS)*, pages 608–617, October 2013.

[C65] V. Guruswami and S. Narayanan. Combinatorial limitations of average-radius list decoding. In *Proceedings of the 17th International Workshop on Randomization and Computation*, pages 591–606, August 2013.

[C66] V. Guruswami and K. Onak. Superlinear lower bounds for multipass graph processing. In *Proceedings of the 28th IEEE Conference on Computational Complexity*, pages 287–298, June 2013.

[C67] V. Guruswami and C. Xing. List decoding Reed-Solomon, Algebraic-Geometric, and Gabidulin subcodes up to the Singleton bound. In *Proceedings of the 45th ACM Symposium on Theory of Computing*, pages 843–852, June 2013.

[C68] A. Beutel, W. Xu, V. Guruswami, C. Palow, and C. Faloutsos. CopyCatch: Stopping group attacks by spotting lockstep behavior in social networks. In *Proceedings of the 22nd International World Wide Web conference*, pages 119–130, May 2013.

[C69] M. Cheraghchi, V. Guruswami, and A. Velingker. Restricted isometry of Fourier matrices and list decodability of random linear codes. In *Proceedings of 24th ACM-SIAM Symposium on Discrete Algorithms*, pages 432–442, 2013.

[C70] V. Guruswami and A. K. Sinop. Approximating non-uniform sparsest cut via generalized spectra. In *Proceedings of 24th ACM-SIAM Symposium on Discrete Algorithms*, pages 295–305, 2013.

[C71] V. Guruswami and A. K. Sinop. Faster SDP hierarchy solvers for local rounding algorithms. In *Proceedings of the 53rd IEEE Symposium on Foundations of Computer Science*, October 2012.

[C72] V. Guruswami and Y. Zhou. Approximating bounded occurrence ordering CSPs. In *Proceedings of 15th International Workshop on Approximation, Randomization, and Combinatorial Optimization (APPROX)*, pages 158–169, 2012.

[C73] V. Guruswami and C. Xing. Folded codes from function fields and improved optimal rate list decoding. In *Proceedings of the 44th ACM Symposium on Theory of Computing*, pages 339–350, 2012.

[C74] 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.

[C75] 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*, pages 388–405, 2012.

[C76] 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*, pages 699–717, 2012.

[C77] 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*, pages 1207–1214, 2012.

[C78] 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.

[C79] V. Guruswami and C. Wang. Optimal rate list decoding via derivative codes. In *Proceedings of APPROX/RANDOM 2011*, pages 593–604, August 2011.

[C80] V. Guruswami. Linear-algebraic list decoding of folded Reed-Solomon codes. In *Proceedings of the 26th IEEE Conference on Computational Complexity*, June 2011.

[C81] 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.

[C82] 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.

[C83] 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.

[C84] 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.

[C85] 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.

[C86] 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.

[C87] 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.

[C88] 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.

[C89] 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.

[C90] 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.

[C91] 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.

[C92] 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.

[C93] 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.

[C94] 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.

[C95] 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.

[C96] 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.

[C97] 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.

[C98] 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.

[C99] 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.

[C100] 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.

[C101] 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.

[C102] 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.

[C103] 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.

[C104] 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.

[C105] 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.

[C106] 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.

[C107] V. Guruswami. On 2-query codeword testing. In *Proceedings of 17th International Symposium on Algorithms and Computation*, pages 267–276, December 2006.

[C108] 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.

[C109] 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.

[C110] 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.

[C111] 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.

[C112] 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.

[C113] 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.

[C114] 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.

[C115] 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.

[C116] 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.

[C117] 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.

[C118] 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.

[C119] 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.

[C120] 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.

[C121] 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.

[C122] 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.

[C123] V. Guruswami. Better extractors for better codes? In *Proceedings of 36th Annual ACM Symposium on Theory of Computing (STOC)*, pages 436–444, June 2004.

[C124] 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.

[C125] 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.

[C126] V. Guruswami. List decoding with side information. In *Proceedings of the 18th IEEE Conference on Computational Complexity (CCC)*, pages 300–309, July 2003.

[C127] 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.

[C128] I. Dinur, V. Guruswami, S. Khot, and O. Regev. A new multilayered PCP and the hardness of hypergraph vertex cover. In *Proceedings of the 35th ACM Symposium on Theory of Computing (STOC)*, pages 595–601, June 2003.

[C129] V. Guruswami and P. Indyk. Embeddings and non-approximability of geometric problems. In *Proceedings of the 14th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA)*, pages 537–538, 2003.

[C130] V. Guruswami and I. Shparlinski. Unconditional proof of tightness of Johnson Bound. In *Proceedings of the 14th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA)*, pages 754–755, 2003.

[C131] L. Engebretsen and V. Guruswami. Is constraint satisfaction over two variables always easy? In *6th International Workshop on Randomization and Approximation Techniques in Computer Science (RANDOM)*, pages 224–238, 2002.

[C132] V. Guruswami and M. Sudan. Decoding concatenated codes using soft information. In *Proceedings of the 17th Annual IEEE Conference on Computational Complexity (CCC)*, pages 148–157, 2002.

[C133] V. Guruswami. Limits to list decodability of linear codes. In *Proceedings of the 34th Annual ACM Symposium on Theory of Computing (STOC)*, pages 802–811, 2002.

[C134] V. Guruswami and P. Indyk. Near-optimal linear-time codes for unique decoding and new list-decodable codes over smaller alphabets. In *Proceedings of the 34th Annual ACM Symposium on Theory of Computing (STOC)*, pages 812–821, 2002.

[C135] N. Alon, V. Guruswami, T. Kaufman, and M. Sudan. Guessing secrets efficiently via list decoding. In *Proceedings of the 13th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA)*, pages 254–262, 2002.

[C136] V. Guruswami. List decoding from erasures: Bounds and code constructions. In *21st Foundations of Software Technology and Theoretical Computer Science*, pages 195–206, 2001.

[C137] V. Guruswami. Constructions of codes from number fields. In *14th International Symposium on Applied Algebra, Algebraic Algorithms and Error Correcting Codes (AAECC)*, pages 129–140, 2001.

[C138] V. Guruswami and P. Indyk. Expander-based constructions of efficiently decodable codes. In *Proceedings of the 42nd Annual IEEE Symposium on Foundations of Computer Science (FOCS)*, pages 658–667, 2001.

[C139] V. Guruswami. Inapproximability results for set splitting and satisfiability problems with no mixed clauses. In *3rd International Workshop on Approximation Algorithms for Combinatorial Optimization Problems (APPROX)*, pages 155–166, 2000.

[C140] V. Guruswami and M. Sudan. On representations of Algebraic-geometric codes for list decoding. In *Proceedings of the 8th Annual European Symposium on Algorithms*, pages 244–255, 2000.

[C141] V. Guruswami, J. Håstad, and M. Sudan. Hardness of approximate hypergraph coloring. In *Proceedings of the 41st Annual IEEE Symposium on Foundations of Computer Science (FOCS)*, pages 149–158, 2000.

[C142] V. Guruswami, A. Sahai, and M. Sudan. 'Soft-decision' decoding of Chinese Remainder codes. In *Proceedings of the 41st Annual IEEE Symposium on Foundations of Computer Science (FOCS)*, pages 159–168, 2000.

[C143] M. Charikar, V. Guruswami, R. Kumar, S. Rajagopalan, and A. Sahai. Combinatorial feature selection problems. In *Proceedings of the 41st Annual IEEE Symposium on Foundations of Computer Science (FOCS)*, pages 631–640, 2000.

[C144] V. Guruswami and S. Khanna. On the hardness of 4-coloring a 3-colorable graph. In *Proceedings of the 15th IEEE Conference on Computational Complexity (CCC)*, pages 188–197, 2000.

[C145] V. Guruswami and M. Sudan. List decoding algorithms for certain concatenated codes. In *Proceedings of the 32nd Annual ACM Symposium on Theory of Computing (STOC)*, pages 181–190, 2000.

[C146] M. Charikar, R. Fagin, V. Guruswami, J. M. Kleinberg, P. Raghavan, and A. Sahai. Query strategies for priced information. In *Proceedings of the 32nd Annual ACM Symposium on Theory of Computing (STOC)*, pages 582–591, 2000.

[C147] 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. In *Proceedings of the 31st Annual ACM Symposium on Theory of Computing (STOC)*, pages 19–28, 1999.

[C148] V. Guruswami and A. Sahai. Multiclass learning, Boosting, and Error-correcting codes. In *12th Annual Conference on Computational Learning Theory (COLT)*, pages 145–155, 1999.

[C149] Y. Dodis, V. Guruswami, and S. Khanna. The 2-catalog segmentation problem. In *Proceedings of the 10th ACM-SIAM Symposium on Discrete Algorithms (SODA)*, pages 897–898, 1999.

[C150] V. Guruswami and M. Sudan. Improved decoding of Reed-Solomon and Algebraic-geometric codes. In *Proceedings of the 39th Annual IEEE Symposium on Foundations of Computer Science (FOCS)*, pages 28–39, 1998.

[C151] V. Guruswami, D. Lewin, M. Sudan, and L. Trevisan. A tight characterization of NP with 3-query PCPs. In *Proceedings of the 39th Annual IEEE Symposium on Foundations of Computer Science (FOCS)*, pages 8–17, 1998.

[C152] V. Guruswami, C. P. Rangan, M. Chang, G. J. Chang, and C. K. Wong. The Vertex-disjoint Triangles problem. In *24th International Workshop on Graph-Theoretic Concepts in Computer Science (WG)*, pages 26–37, 1998.

[C153] V. Guruswami, G. Mohan, and C. S. R. Murthy. Probabilistic routing in wavelength-routed multistage, hypercube, and debruijn networks. In *Proceedings of the 4th International Conference on High Performance Computing*, December 18-21, 1997.

9.4   Invited papers and surveys

[I1] V. Guruswami. Bridging Shannon and Hamming: List error-correction with optimal rate. In *Proceedings of the International Congress of Mathematicians*, August 2010.

[I2] V. Guruswami, J. Lee, and A. Wigderson. Expander codes over reals, Euclidean sections, and compressed sensing. In *Proceedings of the 47th Annual Allerton Conference on Communication, Control, and Computing*, October 2009.

[I3] V. Guruswami. List decoding of binary codes – a brief survey of some recent results. In Y. M. Chee, C. Li, S. Ling, H. Wang, and C. Xing, editors, *IWCC*, volume 5557 of *Lecture Notes in Computer Science*, pages 97–106. Springer, 2009.

[I4] V. Guruswami. Decoding Reed-Solomon codes. In M.-Y. Kao, editor, *Encyclopedia of Algorithms*. Springer, 2008.

[I5] V. Guruswami. List decoding and pseudorandom constructions. In *Proceedings of the 17th Symposium on Applied Algebra, Algebraic Algorithms, and Error Correcting Codes*, pages 1–6, December 2007.

[I6] V. Guruswami and A. Rudra. Achieving list decoding capacity using folded Reed-Solomon codes. In *Proceedings of the 44th Annual Allerton Conference on Communication, Control, and Computing*, October 2006.

[I7] V. Guruswami. Iterative Decoding of Low-Density Parity Check Codes. *Bulletin of the European Association for Theoretical Computer Science (EATCS)*, 90, October 2006.

[I8] V. Guruswami. List Decoding in Pseudorandomness and Average-case Complexity. In *Proceedings of the IEEE Information Theory Workshop*, pages 32–36, March 2006.

[I9] V. Guruswami. Error-correcting codes and expander graphs. *SIGACT News*, 35(3):25–41, September 2004.

[I10] V. Guruswami and P. Indyk. Efficiently decodable codes meeting Gilbert-Varshamov bound for low rates. In *Proceedings of the 41st Annual Allerton Conference on Communication, Control, and Computing (Invited paper)*, pages 944–950, October 2003.

[I11] V. Guruswami and M. Sudan. Reflections on 'Improved Decoding of Reed-Solomon and Algebraic-Geometric Codes'. *IEEE Information Theory Society Newsletter*, 52(1):6–12, March 2002.

[I12] V. Guruswami and P. Indyk. Linear time codes to correct a maximum possible fraction of errors. In *Proceedings of the 39th Annual Allerton Conference on Communication, Control and Computing (Invited paper)*, 2001.

[I13] V. Guruswami, J. Håstad, M. Sudan, and D. Zuckerman. Combinatorial bounds for list decoding. In *Proceedings of the 38th Annual Allerton Conference on Communication, Control and Computing (Invited paper)*, pages 602–612, October 2000.