

Jason Richmond Teutsch

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EDUCATION	Indiana University PhD, mathematics Doctoral Minor, music composition Certificate in Logic, Language, and Computation	2007
	University of Chicago CIC Traveling Scholar in computer science	2005–2007
	Pomona College BA, classical guitar & pure mathematics.	2000
	Budapest Semesters in Mathematics	Fall 1998
POSITIONS HELD	Penn State University Postdoc in Computer Science & Engineering	2012–present
	Johns Hopkins University Human Language Technology Center Of Excellence Associate Staff Scientist	2011–present
	Ruprecht-Karls-Universität Heidelberg Postdoc at Institut für Informatik	2010–2011
	Center for Communications Research Research Staff	2008–2010
	RAND Corporation Postdoctoral Fellow	2007–2008
	UCLA Visiting Scholar in Mathematics	2007–2008
	University of Chicago Teaching Assistant in Computer Science	2005–2006
	Indiana University Associate Instructor in Mathematics	2001–2004
	Fulbright Fellow to Hungary	2000–2001
GRANTS AND WORK VISITS	National University of Singapore Nanyang Technical University NSF quantum computing fellowship Fulbright fellowship to Hungary Blanchard Prize in Composition from Pomona College Joint Program in Survey Methodology Junior Fellow American Recorder Society & Canto Antiquo workshop grants Pomona College Summer Undergraduate Research Program	Jan. 2011, Feb.–Mar. 2010, Jun.–Aug. 2007 Aug. 2007 Summer 2003 2000–2001 May 2000 Summer 1999 Summer 1998 Summer 1998

FOREIGN HUNGARIAN, HEBREW, SPANISH.
LANGUAGES

CLEARANCE US TOP SECRET//SCI

RESEARCH Mathematical logic, theoretical computer science, computational complexity, algo-
INTERESTS rithmic randomness, probability theory and martingales, recursively approximable
real numbers, Gödel numberings (or programming languages), Kolmogorov com-
plexity, shortest computer programs, effective fractal geometry, additive number
theory, efficient data compression, error-correcting codes, information and network
security, data mining, differential privacy, computational neuroscience, combinato-
rial optimization, and game theory.

TALKS [1] Penn State University Logic Seminar Mar. 2012
[2] University of Louisville Math Colloquium Jan. 2012
[3] UCSD Randomness & Complexity Seminar Jan. 2012
[4] Computability, Complexity and Randomness (Cape Town) Feb. 2011
[5] National University of Singapore Logic Seminar Jan. 2011
[6] Bar-Ilan Probability Seminar Jan. 2011
[7] Hebrew University CS Theory Seminar Dec. 2011
[8] Ben-Gurion University Computer Science Colloquium Dec. 2010
[9] Ruprecht-Karls-Universität Heidelberg, Institut für Informatik Nov. 2010
[10] Logic, Computability and Randomness (South Bend) May 2010
[11] Computability in Europe (Heidelberg) June 2009
[12] Okinawa Institute of Science and Technology Mar. 2008
[13] Center for Communications Research–La Jolla Jan. 2008
[14] University of Delaware Computer & Information Sciences Nov. 2007
[15] UCLA Logic Colloquium Nov. 2007
[16] National University of Singapore Logic Seminar July 2007
[17] National Security Agency Jan. 2007
[18] University of Chicago Logic Seminar Nov. 2006
[19] University of Chicago Theory of Computing Seminar Nov. 2005
[20] Indiana University Logic Seminar Nov. 2004
[21] IMA Program in Coding and Cryptography (South Bend) June 2004

REFeree WORK

- Computability
- IEEE Transactions on Information Theory
- Innovations in Computer Science
- Journal of the ACM
- Journal of Symbolic Logic
- MFCS 2011

REFERENCES

- Roger Alperin, *San José State University*
- Joe Buhler, *Center for Communications Research*
- John Case, *University of Delaware*
- Randy Dougherty, *Center for Communications Research*
- Ed Effros, *UCLA*
- Lance Fortnow, *Northwestern University* (PhD advisor)
- Chris Freiling, *Cal State San Bernardino*
- Bjørn Kjos-Hanssen, *University of Hawaii*
- Wolfgang Merkle, *Ruprecht-Karls-Universität Heidelberg*
- Frank Stephan, *National University of Singapore*
- Shinyi Wu, *RAND / University of Southern California*

JOURNAL
PAPERS

- [1] Jason Teutsch. A savings paradox for integer-valued martingales. (submitted to *International Journal of Game Theory*).
- [2] Randall Dougherty, Jack Lutz, Daniel Mauldin, and Jason Teutsch. Translating the Cantor set by a random. (submitted to *Transactions of the American Mathematical Society*).
- [3] Greg Clark and Jason Teutsch. Maximizing T-complexity. (submitted to *Discrete Applied Mathematics*).
- [4] Frank Stephan and Jason Teutsch. Things that can be made into themselves. (submitted to *Chicago Journal of Theoretical Computer Science*).
- [5] Wolfgang Merkle and Jason Teutsch. Constant compression and random weights. (accepted to CiE's anticipated new journal *Computability*).
- [6] Bjørn Kjos-Hanssen, Frank Stephan, and Jason Teutsch. Arithmetic complexity via effective names for random sequences. (to appear in *ACM Transactions on Computational Logic*).
- [7] Frank Stephan and Jason Teutsch. An incomplete set of shortest descriptions. *The Journal of Symbolic Logic*, 77(1):291–307, March 2012.
- [8] Adam Chalcraft, Randall Dougherty, Chris Freiling, and Jason Teutsch. How to build a probability-free casino. *Information and Computation*, 211:160–164, 2012.
- [9] Laurent Bienvenu, Frank Stephan, and Jason Teutsch. How powerful are integer-valued martingales? *Theory of Computing Systems*. Special issue for CiE 2010.
- [10] Sanjay Jain, Frank Stephan, and Jason Teutsch. Index sets and universal numberings. *Journal of Computer and System Sciences*, 77(4):760–773, 2011.
- [11] Frank Stephan and Jason Teutsch. Immunity and hyperimmunity for sets of minimal indices. *Notre Dame Journal of Formal Logic*, 49(2):107–125, 2008.
- [12] Jason Teutsch. On the Turing degrees of minimal index sets. *Annals of Pure and Applied Logic*, 148:63–80, 2007.

CONFERENCE
PAPERS/THESIS

- [1] Wolfgang Merkle and Jason Teutsch. Constant compression and random weights. In *29th International Symposium on Theoretical Aspects of Computer Science (STACS 2012)*, volume 14 of *Leibniz International Proceedings in Informatics (LIPIcs)*, pages 172–181, Dagstuhl, Germany, 2012.
- [2] Sanjay Jain, Frank Stephan, and Jason Teutsch. Closed left-r.e. sets. In *Theory and Applications of Models of Computation (TAMC 2011)*, volume 6648 of *Lecture Notes in Computer Science*, pages 218–229. Springer Berlin / Heidelberg, 2011.
- [3] Laurent Bienvenu, Frank Stephan, and Jason Teutsch. How powerful are integer-valued martingales? In *Programs, Proofs, Processes (CiE 2010)*, volume 6158 of *Lecture Notes in Computer Science*, pages 59–68. Springer-Verlag, Berlin, Heidelberg, 2010.
- [4] Sanjay Jain, Frank Stephan, and Jason Teutsch. Index sets and universal numberings. In *Mathematical Theory and Computational Practice (CiE 2009)*, volume 5635 of *Lecture Notes in Computer Science*, pages 270–279. Springer-Verlag, Berlin, Heidelberg, 2009.

- [5] Jason R. Teutsch. *Noncomputable Spectral Sets*. PhD thesis, Indiana University, 2007.
- [6] Pascal O. Vontobel, Roxana Smarandache, Negar Kiyavash, Jason Teutsch, and Dejan Vukobratovic. On the minimal pseudo-codewords of codes from finite geometries. In *Proceedings of IEEE International Symposium on Information Theory*, pages 980–984, Adelaide, Australia, Sept. 2005.

- COMPOSITIONS
- Mimarom (2010), *niggun*
 - Cats (2007), *carillon solo*
 - Wedding Dance (2005), *clarinet and guitar*
 - Dog Food and Harp (2004), *harp solo*
 - Gnithon Sessop (2004?), *massive orchestra with double chorus and soloists*
 - Two Portraits of a Mexican Woman Named Gordita and one of her Amicable and Fluffy Chinchilla (2003), *flute, clarinet, viola, cello, trumpet, trombone*
 - Rose, Sheep, and Lilly (2003), *alto, triangle, timpani*
 - Psalm (2003), *bases, viola, piano*
 - Toolik (2002), *electronic medium*
 - Intuitive Action (2002), *choir and percussion*
 - Berlin-Mexico (2001), *harp solo*
 - And Also a Dog (2001), *electronic medium*
 - Synthesis #3 (2001), *piano solo*
 - L, the U, and E (2000), *sopranos and piano*
 - Suite for Guitar and String Quartet #2: *American Landscapes* (2000)
 - Suite for Guitar and String Quartet #1 (1999)
 - Four Paintings by Salvador Dalí (1999), *guitar solo*
 - Prelude and two Dances (1998?), *guitar solo*
 - Nähe des Geliebten (1996), *tenor and piano*
 - Reconstruction of Truth (1997), *piano 4-hands*
 - Deconstruction of Truth (1997), *piano solo*
 - Cascades (1997?), *recorder solo*
 - Swamp monster (1997), *bird/recorder, frog/violin, algae/cello, monster/clarinet, bug/piano*
 - Blueberry Rag (1997), *piano solo*

SOLO	Québec on a Friday, 400km	Sept. 2011
BICYCLE	Pacific Coast	To Be Continued / June 2008
TOURS	Kingdom of Cambodia, 650 km	July/Aug. 2007
	Sister Bay–Postville–Nauvoo, 1200 mi.	July 2006
	Around Lake Michigan, 1700 mi.	July 2004
	The Southeastern US, 3000 mi.	July 2003
	Philly to Cleveland, 500 mi.	June 2000
	<i>Other rides:</i>	
	BBC Double Century Ride	6/14/2003
	Bicycle Ride Across Georgia, 342 mi.	1995
	Northern California, 900 mi.	1993
	Blue Ridge Parkway, 469 mi.	1992