Stanford



John Gill

Associate Professor of Electrical Engineering, Emeritus

Bio

BIO

Gill's research interests are in the areas of computational complexity theory and information theory, including probabilistic computation, lossless data compression, and error correcting codes.

ACADEMIC APPOINTMENTS

- Emeritus Faculty, Acad Council, Electrical Engineering

PROFESSIONAL EDUCATION

- PhD, University of California, Berkeley , Mathematics (1972)
- MA, University of California, Berkeley , Mathematics (1969)
- BS, Georgia Institute of Technology , Applied Mathematics (1967)

LINKS

- http://ee.stanford.edu/~gill/: http://ee.stanford.edu/~gill/

Publications

PUBLICATIONS

- **Fused Fibonacci Like (p,q)-Sequences with Compression and Barcoding Applications** *Conference on Multimedia on Mobile Devices and Multimedia Content Access - Algorithms and Systems VI*
  Agaian, S., Garcia, J., Abdul-Kafi, S., Gill, J. T.
  SPIE-INT SOC OPTICAL ENGINEERING.2012
- **Low-Complexity Non-Uniform Demand Multicast Network Coding Problems** *47th Annual Allerton Conference on Communication, Control, and Computing*
  Koo, J. C., Gill, J. T.
  IEEE.2009: 228–235
- **Lagrangian vector quantization with combined entropy and codebook size constraints** *IEEE TRANSACTIONS ON INFORMATION THEORY*
  Gray, R. M., Linder, T., Gill, J. T.
  2008; 54 (5): 2220-2242
- **Computation Complexity of Comparing Real Numbers**
  Sohangir, S., Gill, J., T.
  2007
- **Quantization with joint entropy/memory constraints** *16th Data Compression Conference*
  Gray, R. M., Gill, J. T.

IEEE COMPUTER SOC.2006: 223–232

- **Quantization with Joint Entropy/Memory Constraints**
  Gray, R., M., Gill, J., T.
  2006
- **Improving Gallager's Upper Bound on Huffman Codes Redundancy**
  Shen, J., P., Gill, J., T.
  2001
- **A new upper bound on the data expansion of Huffman codes** *IEEE International Symposium on Information Theory*
  Shen, J. P., Gill, J.
  IEEE.2000: 372–372
- **Analysis on a hidden Markov channel model** *IEEE Global Communications Conference (GLOBECOM 99)*
  Shen, J. P., Gill, J.
  IEEE.1999: 437–441
- **Smart photonic networks and computer security for image data** *Conference on Multimedia Networks - Security, Displays, Terminals, and Gateways*
  Campello, J., GILL, J. T., Morf, M., Flynn, M. J.
  SPIE - INT SOC OPTICAL ENGINEERING.1998: 272–279
- **TERSE, SUPERTERSE, AND VERBOSE SETS** *INFORMATION AND COMPUTATION*
  Beigel, R., Gasarch, W. I., Gill, J., OWINGS, J. C.
  1993; 103 (1): 68-85
- **Terse, Superterse, and Verbose Sets** *Information and Computation*
  Beigel, R., Gasarch, W., I., Gill, J., T., Owings Jr., J., C.
  1993; 103: 68–85
- **Computation-Rate-Distortion in Transform Coders for Image Compression**
  Gormish, M., J., Gill, J., T.
  1993
- **COUNTING CLASSES - THRESHOLDS, PARITY, MODS, AND FEWNESS** *7TH ANNUAL SYMP ON THEORETICAL ASPECTS OF COMPUTER SCIENCE (STACS 90)*
  Beigel, R., Gill, J.
  ELSEVIER SCIENCE BV.1992: 3–23
- **Counting Classes: Thresholds, Parity, Mods, and Fewness** *Theoretical Computer Science, Special issue devoted to the 1990 STACS.*
  Beigel, R., Gill, J., T.
  1992; 103: 3–23
- **Upper Bounds on Huffman Codeword Lengths**
  Chu, K., C., Gill, J., T.
  1991
- **Codebook Compression for Alphabetic Codes**
  Chu, K., C., Gill, J., T.
  1991
- **Mixed-Radix Huffman Codes**
  Chu, K., C., Gill, J., T.
  1991
- **An Upper Bound on Huffman Codeword Lengths**
  Chu, K., C., Gill, J., T.
  1991
- **COUNTING CLASSES - THRESHOLDS, PARITY, MODS, AND FEWNESS** *LECTURE NOTES IN COMPUTER SCIENCE*

Beigel, R., Gill, J., Hertrampf, U.
1990; 415: 49-57

- **Counting Classes: Thresholds, Parity, Mods, and Fewness**
  Beigel, R., Gill, J., T., Hertrampf, U.
  1990
- **Sorting n Objects with a k-Sorter** *IEEE Transactions on Computers*
  Beigel, R., Gill, J., T.
  1990; 39: 714–716
- **Semi-Custom VLSI Systems**
  Gamal, A., El, Gill, J., T.
  1989
- **On the Huffman Encoding of Infinite Source Alphabets**
  Cot, N., Gill, J., T.
  1982
- **Hardware/Software Tradeoffs for Increased Performance**
  Hennessy, J., Jouppi, N., Baskett, F., Gross, T., Gill, J., T.
  1982
- **The MIPS Machine**
  Hennessy, J., Jouppi, N., Gill, J., T., Baskett, F., Strong, A., Gross, T.
  1982
- **NEWTONS METHOD AND RATIOS OF FIBONACCI NUMBERS** *FIBONACCI QUARTERLY*
  Gill, J., Miller, G.
  1981; 19 (1): 1-4
- **Relative to a Random Oracle A, PA ≠ NPA ≠ co − NPA with Probability 1** *SIAM Journal on Computing*
  Bennett, C., Gill, J., T.
  1981; 10: 96–113
- **MIPS: A VLSI Processor Architecture**
  Hennessy, J., Jouppi, N., Baskett, F., Gill, J., T.
  1981
- **An Electronic Information System Usable by the Blind**
  Fowler, G., Linvill, J., Gill, J., T., Morf, M.
  1981
- **Newton's Method and Ratios of Fibonacci Numbers** *The Fibonacci Quarterly*
  Gill, J., T., Miller, G.
  1981; 19: 1–4
- **RELATIVE TO A RANDOM ORACLE-A, PA NOT-EQUAL NPA NOT-EQUAL CO-NPA WITH PROBABILITY-1** *SIAM JOURNAL ON COMPUTING*
  Bennett, C. H., Gill, J.
  1981; 10 (1): 96-113
- **Deterministic Simulation of Tape-Bounded Probabilistic Turing Machine Transducers** *Theoretical Computer Science*
  Gill, J., T., Hunt, J., Simon, J.
  1980; 12: 333–338
- **Exact and Approximate Membership Testers**
  Carter, L., Floyd, R., Gill, J., T., Markowsky, G., Wegman, M.
  1978
- **COMPUTATIONAL COMPLEXITY OF PROBABILISTIC TURING MACHINES** *SIAM JOURNAL ON COMPUTING*
  Gill, J.

1977; 6 (4): 675-695

- **Computational Complexity of Probabilistic Turing Machines** *SIAM Journal on Computing*
  Gill, J., T.
  1977; 6: 675–695
- **Bounds on the Cost of Optimal Uniquely Decipherable Codes**
  Cot, N., Gill, J., T.
  1977
- **Polynomial Reducibilities and Upward Diagonalizations**
  Simon, I., Gill, J., T.
  1977
- **The Enumeration of Comparative Probability Relations** *The Annals of Probability*
  Fine, T., Gill, J., T.
  1976; 4: 667–673
- **Ink, Dirty-Tape Turing Machines, and Quasicomplexity Measures**
  Gill, J., T., Simon, I.
  1976
- **Ink, Dirty-Tape Turing Machines, and Quasicomplexity Measures** *Automata, Languages, and Programming*
  Gill, J., T., Simon, I.
  edited by Michaelson, A., Milner, R.
  Edinburgh University Press, Edinburgh.1976: 285–306
- **Relativizations of the P =? NP Question** *SIAM Journal on Computing*
  Baker, T., Gill, J., T., Solovay, R.
  1975; 4: 431–442
- **SUBCREATIVE SETS AND S-REDUCIBILITY** *JOURNAL OF SYMBOLIC LOGIC*
  GILL, J. T., Morris, P. H.
  1974; 39 (4): 669-677
- **On Subcreative Sets and S-Reducibility** *Journal of Symbolic Logic*
  Gill, J., T., Morris, P.
  1974; 39: 669–677
- **Probabilistic Turing Machines and Computational Complexity**
  Gill, J., T.
  1974
- **Relativizations of the P =?NP Question**
  Baker, T., Gill, J., T., Solovay, R.
  1974
- **On Almost Everywhere Complex Recursive Functions** *Journal of the Association for Computing Machinery*
  Gill, J., T., Blum, M.
  1974; 21: 425–435
- **Computational Complexity of Probabilistic Turing Machines**
  Gill, J., T.
  1974
- **ALMOST EVERYWHERE COMPLEX RECURSIVE FUNCTIONS** *JOURNAL OF THE ACM*
  Gill, J., Blum, M.
  1974; 21 (3): 425-435
- **Conjectures on Uniquely Decipherable Codes** *IEEE Transactions on Information Theory*
  Carter, L., Gill, J., T.

1973; IT-20: 394–396

- **A Joke about P =?NP**
  Gill, J., T., Ladner, R.
  1973

- **Speedups by Probabilistic Computation**
  Gill, J., T.
  1973

- **Some Fruitful Areas for Research into Complexity Theory** *Computational Complexity*
  Blum, M., Gill, J., T.
  edited by Rustin, R.
  Algorithmics Press, New York.1973: 23–36

- **Some Fruitful Areas for Research into Complexity Theory**
  Gill, J., T., Blum, M.
  1971