

Ting Gu

Mathematics and Computer Science Department, College of the Holy Cross, tgu@holycross.edu

EDUCATION

University of Kentucky, Lexington, USA

Ph.D. in Computer Science

May 2016

Dissertation: Statistical Properties of Pseudorandom Sequences

Central China Normal University (CCNU), Wuhan, China

M.E. in Computer Science

Jun. 2010

Thesis: Research on Network Security Evaluation Based on Attack Graph

B.S. in Computer Science

Jun. 2007

Recommended to Master Program with high distinction (selection rate: 1.6%)

WORKING EXPERIENCE AND TRAINING

Assistant Professor, College of the Holy Cross

Jul. 2020 - present

CSCI 131 Techniques of Programming (Fall 2020, Spring 2022, Spring 2024, Fall 2024)

CSCI 235 Analysis of Algorithms (Fall 2020, Spring 2021, Fall 2021, Spring 2025)

CSCI 399 Databases (Spring 2021, Spring 2025)

CSCI 135 Discrete Structures (Fall 2021, Fall 2025, Spring 2026)

CSCI 132 Data Structures (Spring 2026)

CSCI 399 Computer Security (Spring 2022, Spring 2024, Fall 2025)

Assistant Professor, Elizabethtown College

Jul. 2016 - Jun. 2020

Teaching & Research Assistant, University of Kentucky

Aug. 2010 - May 2016

Research Assistant, Central China Normal University

Aug. 2007 - Jun. 2010

Graduate Certificate in College Teaching and Learning

Date awarded: May 2015

Graduate School, University of Kentucky

PUBLICATIONS

Journals

- Chen, Z., Gu, T., Klapper, A. and Zhou, Y., 2025. On the computation of q -transform of Boolean functions. *Advances in Mathematics of Communications*, 22 (2025): 204-216.
- Chen, Z., Gu, T., and Klapper, A., 2019. On the q -bentness of Boolean functions. *Designs, Codes and Cryptography*, 87, pp.163-171.
- Gu, T., Chen, Z. and Klapper, A., 2018. Correlation immune functions with respect to the q -transform. *Cryptography and Communications*, 10, pp.1063-1073.
- McDevitt, T., Lehr, J. and Gu, T., 2018. A parallel time-memory tradeoff attack on the hill cipher. *Cryptologia*, 42(5), pp.408-426.
- Gu, T. and Klapper, A., 2016. Statistical properties of half- l -sequences. *Cryptography and Communications*, 8, pp.383-400.
- Xia, X., Xiao D., and Gu, T., 2008. Towards alert verification using ontology-based context classification in event correlation process. *Journal of Beijing Jiaotong University*, 32(6), pp.116-122.

Conferences

- Cui, L., Wang, X., Gu, T., Zhang, C. and Fei, Z., 2025. Privacy-enhanced point-of-interest recommendations using synthetic data: a comparative study of CTGAN and clustering techniques. In *2025 IEEE 22nd Annual Consumer Communications & Networking Conference (CCNC)* (pp. 1-8). IEEE.
- Cui, L., Wang, X., and Gu, T., 2023. A generic data synthesis framework for privacy-preserving point-of-interest recommender systems. In *Proceedings of the 2023 International Conference on Research in Adaptive and Convergent Systems* (pp. 1-7). ACM.
- Gu, T., Lim, K., Choi, G.H. and Wang, X., 2022. A LiDAR information-based privacy-preserving authentication scheme using elliptic curve cryptosystem in VANETs. In *2022 IEEE 19th Annual Consumer Communications & Networking Conference (CCNC)* (pp. 525-526). IEEE.
- Gu, T. and Klapper, A., 2014. Distribution properties of half- ℓ -sequence. In *International Conference on Sequences and Their Applications* (pp. 234-245). Cham: Springer International Publishing.
- Gu, T., Xiao, D., Liu, X. and Xia, X., 2009. Multilevel event correlation based on collaboration and temporal causal correlation. In *2009 5th International Conference on Wireless Communications, Networking and Mobile Computing* (pp. 1-4). IEEE.
- Liu, X., Xiao, D., Gu, T. and Xu, H., 2008. Scenario recognition based on collaborative attack modeling in intrusion detection. In *Proceedings of the International MultiConference of Engineers and Computer Scientists* (Vol. 1).

Workshop

- Chen, Z., Gu, T., Klapper, A. and Zhou, Y., 2021. On the computation of q -transform of Boolean functions. In *6th International Workshop on Boolean Functions and their Applications (BFA)*, Rosendal, Norway.

PRESENTATIONS

- Ting Gu. Lidar information-based privacy-preserving authentication scheme using elliptic curve cryptosystem in VANETs. In *2022 IEEE 19th Annual Consumer Communications & Networking Conference (CCNC)*, Jan. 2022, remotely.
- Ting Gu. On the computation of q -transform of Boolean functions. In *6th International Workshop on Boolean Functions and their Applications (BFA)*, Sep. 2021, Rosendal, Norway/Hybrid.
- Ting Gu. Correlation immune functions with respect to the q -transform. In *Joint Mathematics Meetings*, Jan. 2019, Baltimore, Maryland.
- Ting Gu. Correlation attacks against stream ciphers. In *EPaDel section of the MAA*, Shippensburg University, Nov. 2017, Shippensburg, PA.
- Ting Gu. Analysis of the statistical power of correlation attacks on nonlinear combiners. In *Millersville University and Franklin & Marshall College Joint Colloquium*, Oct. 2017, Millersville, PA.
- Ting Gu. Distribution properties of FCSR sequences. In *Keeping Current Seminar*, Computer Science Department, University of Kentucky, Mar. 2015, Lexington, KY.
- Zhaohong Wang, Ting Gu, and Sen-ching Cheung. A theoretical framework for distributed secure outsourced computing using secret sharing. Poster Presentation in *IEEE International Workshop on Information Forensics and Security (WIFS)*, Dec. 2014, Atlanta, GA.
- Ting Gu. Replacing linear feedback shift register (LFSR) by FCSR in stream cipher design. In *26th Annual Eastern Kentucky University Symposium in Mathematical, Statistical and Computer Sciences*, Mar. 2013, Richmond, KY.
- Ting Gu. Multilevel event correlation based on collaboration and temporal causal correlation. In *5th International Conference on Wireless Communications, Networking and Mobile Computing*, Sep. 2009, Beijing, China.
- Ting Gu. Towards alert verification using ontology-based context classification in event correlation process. In *Cross-Strait Conference on Information Science and Technology*, Dec. 2008, Beijing, China.

GRANTS

- Research associates grant from J.D. Power Center, Fall 2023
- Innovation lab grant on cybersecurity, 2019, Elizabethtown College
- Travel grant support to attend to the workshop of Topological Data Analysis: Theory and Applications, Macalester College, June 12-16, 2017, St. Paul, MN
- Travel grant support to attend STEM-UP PA's leadership development for academic women program, Spring 2017 Cohort
- Creative Arts and Research Program (SCARP) award for undergraduate summer research project at Elizabethtown College, 2017
- NSF grant support to attend Cloud Security Curriculum Development Workshop at UNC-Chapel Hill, July 13-15, 2016, Chapel Hill, NC
- NSF travel grant support to attend POGIL Southwest Regional Workshop at Santa Clara University, June 28-30, 2016, Santa Clara, CA
- Travel grant to attend New Educators Workshop at SIGCSE 2016, Memphis, Tennessee
- Thaddeus B. Curtz Memorial Scholarship Award, University of Kentucky, Apr. 2013
- Student travel support from Graduate School Fellowship, University of Kentucky, 2014
- Student travel support from the Computing Research Association – Women (CRA-W), 2013

PROFESSIONAL SERVICE

- Technical program committee and session chair of security and privacy for/by federated learning in IEEE 22nd Consumer Communications & Networking Conference (CCNC), 2025
- Member of committee on faculty affairs, Fall 2024 - Spring 2026
- Math/CS/Stats club advisor, Spring 2024 - Spring 2026
- Member of study abroad committee, Spring 2024
- Study abroad advisor for computer science students, Fall 2020 - Spring 2022, Fall 2023 - Spring 2026
- Member of search committee for tenure-track computer science faculty, Fall 2023
- Reviewer of IEEE 21st Consumer Communications & Networking Conference (CCNC), 2023
- Reviewer of Neurocomputing, 2021, 2022
- Grad school and fellowship advisor for computer science students, Fall 2021 - Spring 2022
- Chair of the independent study committee, Spring 2019 - Spring 2020, Elizabethtown College
- Academic Council, Spring 2019 - Spring 2021, Elizabethtown College
- Reviewer for IEEE Transactions on Information Theory, 2018
- Computer science club advisor, Fall 2018 - Spring 2020, Elizabethtown College
- Core committee, Spring 2018, Elizabethtown College
- Search committee for new computer science faculty, Fall 2017 - Spring 2018, Fall 2018 - Spring 2019, Elizabethtown College
- Student volunteer at SIGCSE 2016, Memphis, Tennessee
- Reviewer for Sequence and their application (SETA) 2016
- Reviewer for IEEE Transactions on Information Theory, 2015
- Reviewer for IEEE Transactions on Information Forensics & Security, 2015, 2016
- Reviewer for Signal Processing: Image Communication, 2015