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EDUCATION

Southwest Jiaotong University <i>Ph.D. in Information Security</i>	2011 – 2017
Southwest Jiaotong University <i>B.Sc. in Information Security (with Mao Yisheng Honors Class)</i>	2007 – 2011

PROFESSIONAL EXPERIENCE

Associate Professor <i>School of Communication and Information Engineering, Shanghai University</i>	2021 –
Assistant Professor <i>School of Communication and Information Engineering, Shanghai University</i>	2019 – 2021
Research Scientist <i>Institute of Automation, Chinese Academy of Sciences</i>	Shanghai 200444, China
Visiting Scholar <i>Dept. of Electrical and Computer Engineering, New Jersey Institute of Technology</i>	2017 – 2019
	Beijing 100190, China
	2014 – 2016
	Newark 07102, NJ, USA

TEACHING

Matrix Theory and Methods <i>linear space, norms, spectral theory, matrix factorizations, generalized inverses, etc.</i>	Spring
Information Networks and Security <i>cryptography, firewall, intrusion detection, network security protocols, etc.</i>	Spring
Computer Programming (C Language) <i>pointer, array, queue, structure, tree, graph, file input and output, etc.</i>	Fall
Multimedia Security <i>multimedia watermarking, steganography, steganalysis, and forensics, etc.</i>	Fall

RESEARCH INTERESTS

LLM security, AI security, multimedia security, multimedia forensics, multimedia signal processing.

KEY WORDS OF RESEARCH

image/video/audio signal processing, natural language processing, information hiding, data hiding, digital watermarking, steganography, steganalysis, covert communication, deep learning, computer security, artificial intelligence, intellectual property protection, deep neural networks, backdooring, digital forensics, tamper detection and localization, quantum computing, language model, large language model, linguistic steganography, linguistic steganalysis, reversible data hiding, reversible watermarking, authentication, data embedding, graph neural networks, adversarial examples, ownership verification, data poisoning, quantum artificial intelligence, anomaly detection, machine learning, explainability, game theory, cryptography, network security, wireless communication, etc.

SELECTED MEDIA, AWARDS AND HONORS

Feature Interview: Watermarking the World of Data		
Magazine "Scientific Chinese"		2025
World's Top 2% Scientists	https://topresearcherslist.com/	
released by Stanford University		2025
Outstanding Paper Award		
co-author, in <i>China Media Forensics and Security Workshop</i>		2023
CCF-Tencent Rhino-Bird Young Faculty Open Research Fund		
Principal Investigator, supported by Tencent Inc.		2022
Best Presentation Award		
first author, in <i>China Media Forensics and Security Workshop</i>		2021
Outstanding Paper Award		
first author, in <i>China Information Hiding and Multimedia Security Workshop</i>		2019
Shanghai "Chenguang" Program		
Principal Investigator, supported by Shanghai Municipal Education Commission		2019
Silver Medal		
contestant, 36th ACM-ICPC Asia Regional Programming Contest (Chengdu Site)		2011
Silver Medal		
contestant, 36th ACM-ICPC Beijing Invitational Programming Contest		2011
Silver Medal		
contestant, "Google Cup" ACM-ICPC Fudan Invitational Programming Contest		2011
Bronze Medal		
contestant, 35th ACM-ICPC Asia Regional Programming Contest (Hangzhou Site)		2010
Bronze Medal		
contestant, 35th ACM-ICPC Asia Regional Programming Contest (Tianjin Site)		2010

SELECTED ACTIVITIES AND SERVICES

Associate Editor		
IEEE Signal Processing Letters		2025 –
Editorial Board Member		
Scientific Reports, Springer Nature		2025 –
Technical Committee Member		
APSIPA Multimedia Security and Forensics (MSF)		2023 –
Steering Committee Member		
14th – 18th International Conference on Advances in Multimedia		2022 – 2026
Publicity Chair		
8th International Conference on Frontiers in Cyber Security (Guiyang, China)		2025
Special Session Organizer		
18th International Conference on Communications and Broadband Networking (Chengdu, China)		2025
Special Session Organizer		
APSIPA Annual Summit and Conference (Macau, China)		2024
Local Organization Chair		
14th IEEE International Workshop on Information Forensics and Security (Shanghai, China)		2022
Keynote Speech		
14th International Conference on Advances in Multimedia (Barcelona, Spain)		2022

Session Chair

IEEE International Symposium on Biometrics and Security Technologies (Chengdu, China) 2018

Reviewer

for influential journals and conferences covering information forensics and security, e.g., IEEE SPL. often

FUNDING / SPONSORS (Total funding as of 12/31/2024: CNY 3,000,000+)

Nanning Science and Technology Bureau

Principal Investigator for Shanghai University, CNY 270,000 / 450,000 (60%) 2025 – 2028

Science and Technology Department of Guizhou Province

Principal Investigator, CNY 200,000 2025 – 2028

Science and Technology Commission of Shanghai Municipality

Principal Investigator, CNY 200,000 2024 – 2027

National Natural Science Foundation of China

Principal Investigator for Shanghai University, CNY 768,000 / 2,560,000 (30%) 2024 – 2027

Science and Technology Department of Tibet

Principal Investigator for Shanghai University, CNY 900,000 / 3,000,000 (30%) 2024 – 2026

CCF-Tencent Rhino-Bird Young Faculty Open Research Fund

Principal Investigator, CNY 150,000 2022 – 2023

Shanghai “Chen Guang” Program

Principal Investigator, CNY 60,000 2020 – 2022

National Natural Science Foundation of China

Principal Investigator, CNY 280,000 2020 – 2022

China Scholarship Council

Principal Investigator, USD 40,800 2014 – 2016

BOOKS AND BOOK CHAPTERS

Elsevier’20 H. Wu. Unsupervised steganographer identification via clustering and outlier detection. In: *Digital Media Steganography (Chapter 13)*, Elsevier, 2020.

IOP Science’21 H. Wu. Recent advances in reversible watermarking in an encrypted domain. In: *Advanced Security Solutions for Multimedia (Chapter 4)*, IOP Science, 2021.

IntechOpen’21 H. Wu. Graph models in information hiding. In: *Recent Applications in Graph Theory (Chapter 1)*, IntechOpen, 2021.

Springer’24 H. Wu, T. Yang, X. Zheng, Y. Fang. Linguistic steganography and linguistic steganalysis. In: *Adversarial Multimedia Forensics (Chapter 7)*, Springer, 2024.

SELECTED JOURNAL ARTICLES

IEEE SPL’16 G. Xu, H. Wu, Y. Shi. Structural design of convolutional neural networks for steganalysis. *IEEE Signal Processing Letters*, vol. 23, no. 5, pp. 708-712, 2016.

IEEE TCSVT’17 H. Wu, Y. Shi, H. Wang, L. Zhou. Separable reversible data hiding for encrypted palette images with color partitioning and flipping verification. *IEEE Transactions on Circuits and Systems for Video Technology*, vol. 27, no. 8, pp. 1620-1631, 2017.

- IEEE TCSVT'20 F. Ding, H. Wu, G. Zhu, Y. Shi. METEOR: Measurable energy map toward the estimation of resampling rate via a convolutional neural network. *IEEE Transactions on Circuits and Systems for Video Technology*, vol. 30, no. 12, pp. 4715-4727, 2020.
- Elsevier SP'21 Y. Qin, H. Wu, G. Feng. Structured subspace learning-induced symmetric nonnegative matrix factorization. *Signal Processing*, vol. 186, p. 108115, 2021.
- IEEE CIM'21 Z. Wang, G. Feng, H. Wu, X. Zhang. Data hiding in neural networks for multiple receivers. *IEEE Computational Intelligence Magazine*, vol. 16, no. 4, pp. 70-84, 2021.
- IEEE TDSC'21 Y. Chen, H. Wang, H. Wu, Z. Wu, T. Li, A. Malik. Adaptive video data hiding through cost assignment and STCs. *IEEE Transactions on Dependable and Secure Computing*, vol. 18, no. 3, pp. 1320-1335, 2021.
- IEEE SPL'21 H. Wu, B. Yi, F. Ding, G. Feng, X. Zhang. Linguistic steganalysis with graph neural networks. *IEEE Signal Processing Letters*, vol. 28, pp. 558-562, 2021.
- IEEE TCSVT'21 H. Wu, G. Liu, Y. Yao, X. Zhang. Watermarking neural networks with watermarked images. *IEEE Transactions on Circuits and Systems for Video Technology*, vol. 31, no. 7, pp. 2591-2601, 2021.
- Elsevier PR'22 Y. Qin, H. Wu, J. Zhao, G. Feng. Enforced block diagonal subspace clustering with closed form solution. *Pattern Recognition*, vol. 130, p. 108791, 2022.
- IEEE TIP'22 Y. Qin, H. Wu, X. Zhang, G. Feng. Semi-supervised structured subspace learning for multi-view clustering. *IEEE Transactions on Image Processing*, vol. 31, pp. 1-14, 2022.
- IEEE CL'22 L. Zhou, C. Zhang, Q. Zeng, X. Liu, H. Wu. Optimal low-hit-zone frequency-hopping sequence sets with wide-gap for FHMA systems under follower jamming. *IEEE Communications Letters*, vol. 26, no. 5, pp. 969-973, 2022.
- IEEE SPL'22 B. Yi, H. Wu, G. Feng, X. Zhang. ALiSa: Acrostic linguistic steganography based on BERT and Gibbs sampling. *IEEE Signal Processing Letters*, vol. 29, pp. 687-691, 2022.
- Elsevier CS'23 T. Qiao, Y. Ma, N. Zheng, H. Wu, Y. Chen, M. Xu, X. Luo. A novel model watermarking for protecting generative adversarial network. *Computers & Security*, vol. 127, p. 103102, 2023.
- Elsevier ESWA'23 J. Wang, D. Wu, L. Li, J. Zhao, H. Wu, Y. Tang. Robust periodic blind watermarking based on sub-block mapping and block encryption. *Expert Systems with Applications*, vol. 224, p. 119981, 2023.
- IEEE SJ'23 L. Xiong, T. Peng, F. Li, S. Zeng, H. Wu. Privacy-preserving authentication scheme with revocability for multi-WSN in industrial IoT. *IEEE Systems Journal*, vol. 17, no. 1, pp. 38-49, 2023.
- Elsevier PRL'23 H. Wu, C. Li, G. Liu, X. Zhang. Hiding data hiding. *Pattern Recognition Letters*, vol. 165, pp. 122-127, 2023.
- IEEE TCSVT'23 S. Chen, A. Malik, X. Zhang, G. Feng, H. Wu. A fast method for robust video watermarking based on Zernike moments. *IEEE Transactions on Circuits and Systems for Video Technology*, vol. 33, no. 12, pp. 7842-7853, 2023.
- Elsevier InfoSci'24 Y. Liu, C. Li, Z. Wang, H. Wu, X. Zhang. Transferable adversarial attack based on sensitive perturbation analysis in frequency domain. *Information Sciences*, vol. 678, p. 120971, 2024.

- IEEE TDSC'24 T. Yang, H. Wu, B. Yi, G. Feng, X. Zhang. Semantic-preserving linguistic steganography by pivot translation and semantic-aware bins coding. *IEEE Transactions on Dependable and Secure Computing*, vol. 21, no. 1, pp. 139-152, 2024.
- IEEE TKDE'24 Y. Qin, N. Pu, H. Wu. Elastic multi-view subspace clustering with pairwise and high-order correlations. *IEEE Transactions on Knowledge and Data Engineering*, vol. 36, no. 2, pp. 556-568, 2024.
- IEEE IoT'24 X. Zhao, H. Wu, X. Zhang. Effective backdoor attack on graph neural networks in spectral domain. *IEEE Internet of Things Journal*, vol. 11, no. 7, pp. 12102-12114, 2024.
- IEEE TKDE'24 Y. Qin, Z. Tang, H. Wu, G. Feng. Flexible tensor learning for multi-view clustering with markov chain. *IEEE Transactions on Knowledge and Data Engineering*, vol. 36, no. 4, pp. 1552-1565, 2024.
- IEEE TMM'24 Y. Qin, N. Pu, H. Wu. EDMC: Efficient multi-view clustering via cluster and instance space learning. *IEEE Transactions on Multimedia*, vol. 26, pp. 5273-5283, 2024.
- IEEE IoT'24 Y. Liu, L. Zhang, H. Wu, Z. Wang, X. Zhang. Reducing high-frequency artifacts for generative model watermarking via wavelet transform. *IEEE Internet of Things Journal*, vol. 11, no. 10, pp. 18503-18515, 2024.
- IEEE IoT'24 D. Wu, J. Wang, J. Zhao, L. Li, Z. Wang, H. Wu. Adaptive robust watermarking for resisting multiple distortions in real scenes. *IEEE Internet of Things Journal*, vol. 11, no. 10, pp. 33229-33246, 2024.
- IEEE TCSVT'24 L. Lin, D. Wu, J. Wang, Y. Chen, X. Zhang, H. Wu. Automatic, robust and blind video watermarking resisting camera recording. *IEEE Transactions on Circuits and Systems for Video Technology*, vol. 34, no. 12, pp. 13413-13426, 2024.
- IEEE IoT'24 J. Wang, J. Zhao, L. Li, Z. Wang, H. Wu, D. Wu. Robust blind video watermarking based on ring tensor and BCH coding. *IEEE Internet of Things Journal*, vol. 11, no. 24, pp. 40743-40756, 2024.
- IEEE TMM'25 Y. Qin, N. Pu, H. Wu, N. Sebe. Discriminative anchor learning for efficient multi-view clustering. *IEEE Transactions on Multimedia*, vol. 27, pp. 1386-1396, 2025.
- ACM TKDD'25 Y. Qin, N. Pu, H. Wu, N. Sebe. Margin-aware noise-robust contrastive learning for partially view-aligned problem. *ACM Transactions on Knowledge Discovery from Data*, vol. 19, no. 1, pp. 1-20, 2025.
- IEEE TCE'25 L. Xiong, J. Wang, L. Yu, N. Xiong, H. Wu. An efficient privacy-preserving access control scheme for cloud computing services. *IEEE Transactions on Consumer Electronics*, vol. 71, no. 2, pp. 6642-6658, 2025.
- IEEE IoT'25 L. Li, X. Zhang, H. Wu, G. Feng, W. Zhang. FareMark: Model-watermark-driven free-rider detection in federated learning model. *IEEE Internet of Things Journal*, vol. 12, no. 18, pp. 38965-38977, 2025.
- IEEE IoT'25 X. Ren, H. Wu, Y. Wang, H. Liu, X. Lu, G. Sun. StegGuard: Secrets encoder and decoder act as fingerprint of self-supervised pre-trained model. *IEEE Internet of Things Journal*, vol. 12, no. 18, pp. 38172-38184, 2025.

- Elsevier InfoSci'25 W Yang, Y Liu, Y Chen, Y Cui, C Guo, G Shen, H Wu. HSMNet: A multi-resolution grayscale image steganalysis method based on hybrid dilated convolution and self-attention multi-channel network. *Information Sciences*, vol. 728, p. 122824, 2026.
- Elsevier NN'25 J. Hu, L. Li, H. Wu, H. Luo, X. Zhang. Dormant key: unlocking universal adversarial control in text-to-image models. *Neural Networks*, vol. 193, p. 108065, 2026.

SELECTED CONFERENCE PAPERS

- IH&MMSec'16 H. Wu, H. Wang, Y. Shi. PPE-based reversible data hiding. In: *Proc. ACM Workshop on Information Hiding and Multimedia Security*, pp. 187-188, 2016.
- IH&MMSec'16 G. Xu, H. Wu, Y. Shi. Ensemble of CNNs for steganalysis: an empirical study. In: *Proc. ACM Workshop on Information Hiding and Multimedia Security*, pp. 103-107, 2016.
- WIFS'16 H. Wu, H. Wang, Y. Shi. Dynamic content selection-and-prediction framework applied to reversible data hiding. In: *Proc. IEEE International Workshop on Information Forensics and Security*, pp. 1-6, 2016.
- ICPR'18 H. Wu, W. Wang, J. Dong, H. Wang. Ensemble reversible data hiding. In: *Proc. IEEE International Conference on Pattern Recognition*, pp. 2676-2681, 2018.
- MWSF'19 H. Wu, W. Wang, J. Dong, H. Wang. New graph-theoretic approach to social steganography. In: *Proc. IS&T Electronic Imaging, Media Watermarking, Security and Forensics*, pp. 539-1-539-7, 2019.
- MWSF'20 H. Wu, X. Zhang. Reducing invertible embedding distortion using graph matching model. In: *Proc. IS&T Electronic Imaging, Media Watermarking, Security and Forensics*, pp. 21-1-21-10, 2020.
- MWSF'20 J. Wang, H. Wu, X. Zhang, Y. Yao. Watermarking in deep neural networks via error back-propagation. In: *Proc. IS&T Electronic Imaging, Media Watermarking, Security and Forensics*, pp. 22-1-22-9, 2020.
- MWSF'20 H. Kang, H. Wu, X. Zhang. Generative text steganography based on LSTM network and attention mechanism with keywords. In: *Proc. IS&T Electronic Imaging, Media Watermarking, Security and Forensics*, pp. 291-1-291-8, 2020.
- ICASSP'20 H. Wu. Patch-level selection and breadth-first prediction strategy for reversible data hiding. In: *Proc. IEEE International Conference on Acoustics, Speech, and Signal Processing*, pp. 2837-2841, 2020.
- WIFS'21 X. Zhao, Y. Yao, H. Wu, X. Zhang. Structural watermarking to deep neural networks via network channel pruning. In: *Proc. IEEE International Workshop on Information Forensics and Security*, pp. 1-6, 2021.
- ICASSP'22 B. Yi, H. Wu, G. Feng, X. Zhang. Exploiting language model for efficient linguistic steganalysis. In: *Proc. IEEE International Conference on Acoustics, Speech, and Signal Processing*, pp. 3074-3078, 2022.
- MWSF'24 H. Wu. Prompting steganography: a new paradigm. In: *Proc. IS&T Electronic Imaging, Media Watermarking, Security and Forensics*, pp. 338-1-338-11, 2024.

- IH&MMSec'24 C. He, D. Wu, X. Zhang, H. Wu. Watermarking text documents with watermarked fonts. *ACM Workshop on Information Hiding and Multimedia Security*, pp. 187-197, 2024.
- IH&MMSec'24 L. Zhang, Y. Liu, X. Zhang, H. Wu. Suppressing high-frequency artifacts for generative model watermarking by anti-aliasing. *ACM Workshop on Information Hiding and Multimedia Security*, pp. 223-234, 2024.
- WIFS'24 X. Zhao, H. Wu, X. Zhang. Transferable watermarking to self-supervised pre-trained graph encoders by trigger embeddings. In: *Proc. IEEE International Workshop on Information Forensics and Security*, pp. 1-6, 2024.
- MM'25 Y. Qin, N. Pu, H. Wu, Z. Fan. Flexible multi-view clustering with dynamic views generation. In: *ACM International Conference on Multimedia*, pp. 1072-1081, 2025.

* Google Scholar: <https://scholar.google.com/citations?user=IdiF7M0AAAAJ&hl=en>

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