Hanzhou Wu

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EDUCATION

Southwest Jiaotong University — September 2011 – June 2017
Ph.D. in Information Security — *Chengdu 611756, Sichuan, China*

Southwest Jiaotong University — September 2007 – June 2011
B.Sc. in Information Security (with Mao Yisheng Honors Class) — *Chengdu 611756, Sichuan, China*

PROFESSIONAL EXPERIENCE

Adjunct Professor — January 2024 – Present
School of Big Data and Computer Science, Guizhou Normal University — *Guiyang 550025, Guizhou, China*

Associate Professor — March 2021 – Present
School of Communication and Information Engineering, Shanghai University — *Shanghai 200444, China*

Assistant Professor — March 2019 – February 2021
School of Communication and Information Engineering, Shanghai University — *Shanghai 200444, China*

Research Scientist — July 2017 – February 2019
Institute of Automation, Chinese Academy of Sciences — *Beijing 100190, China*

Visiting Scholar — October 2014 – October 2016
Dept. of Electrical and Computer Engineering, New Jersey Institute of Technology — *Newark 07102, NJ, USA*

TEACHING

- Matrix Theory and Methods (graduate course), Spring
- Information Networks and Security (undergraduate course), Spring
- C Language Programming (undergraduate course), Fall
- Multimedia Security (undergraduate course), Fall

RESEARCH INTERESTS

digital watermarking, *steganography*, *steganalysis*, *digital forensics* and so on.

SELECTED AWARDS AND HONORS

Outstanding Paper Award
co-author, in China Media Forensics and Security Workshop — *November 2023*

CCF-Tencent Rhino-Bird Young Faculty Open Research Fund
Principal Investigator, supported by Tencent Inc. — *August 2022*

Best Presentation Award
first author, in China Media Forensics and Security Workshop — *November 2021*

Outstanding Paper Award
first author, in China Information Hiding and Multimedia Security Workshop — *October 2019*

Shanghai "Chenguang" Program
Principal Investigator, supported by Shanghai Municipal Education Commission — *December 2019*

Silver Medal
contestant, 36th ACM-ICPC Asia Regional Programming Contest (Chengdu Site) — *November 2011*

Silver Medal
contestant, 36th ACM-ICPC Beijing Invitational Programming Contest *June 2011*

Silver Medal
contestant, "Google Cup" ACM-ICPC Fudan Invitational Programming Contest *May 2011*

Bronze Medal
contestant, 35th ACM-ICPC Asia Regional Programming Contest (Hangzhou Site) *October 2010*

Bronze Medal
contestant, 35th ACM-ICPC Asia Regional Programming Contest (Tianjin Site) *September 2010*

SELECTED ACTIVITIES AND SERVICES

Guest Editor
New Solutions for Multimedia and Artificial Intelligence Security, Mathematics *2024*

Special Session Chair "AI-Driven Innovations in Cybersecurity ..."
APSIPA Annual Summit and Conference (Macau, China) *2024*

Student Program Chair
12th International Conference on Communications and Broadband Networking (Tibet, China) *2024*

Technical Committee Member
IEEE International Conference on Computer Vision and Machine Intelligence (Allahabad, India) *2024*

Steering Committee Member
16th International Conference on Advances in Multimedia (Barcelona, Spain) *2024*

Technical Committee Member
APSIPA Multimedia Security and Forensics (MFS) *November 2023 - Present*

Invited Speech "Information hiding and its detection"
Binjiang Institute of Zhejiang University (Hangzhou, China) *2023*

Invited Speech "Multimedia and AI security"
Rhino-Bird Middle School Science Talents Training Program (Tencent Inc.) *2023*

Invited Speech "Interpretable model watermarking in frequency domain"
Shenzhen University (Shenzhen, China) *2023*

Invited Speech "Model watermarking for speech signal processing"
A2M Summit (Shanghai, China) *2023*

Steering Committee Member
15th International Conference on Advances in Multimedia (Venice, Italy) *2023*

Keynote Speaker "Advances in DNN watermarking"
14th International Conference on Advances in Multimedia (Barcelona, Spain) *2022*

Steering Committee Member
14th International Conference on Advances in Multimedia (Barcelona, Spain) *2022*

Local Organization Chair
14th IEEE International Workshop on Information Forensics and Security (Shanghai, China) *2022*

Lead Guest Editor
Advances in AI-related Information Forensics and Security, Security and Communication Networks *2022*

Lead Guest Editor
Information Hiding - New Applications and Solutions, International Journal of Distributed Sensor Networks *2021*

FUNDINGS

Science and Technology Department of Tibet
Principal Investigator for Shanghai University, RMB 900,000/3,000,000 — *June 2024 - May 2026*

National Natural Science Foundation of China
Principal Investigator for Shanghai University, RMB 768,000/2,560,000 — *January 2024 - December 2027*

CCF-Tencent Rhino-Bird Young Faculty Open Research Fund
Principal Investigator, RMB 150,000 — *October 2022 - December 2023*

Shanghai "Chen Guang" Program
Principal Investigator, RMB 60,000 — *January 2020 - December 2022*

National Natural Science Foundation of China
Principal Investigator, RMB 280,000 — *January 2020 - December 2022*

China Scholarship Council
Visiting Scholar, USD 40,800 + round-trip flight tickets — *October 2014 - October 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 PUBLICATIONS

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.

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.

IEEE 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.

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 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.

EI 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.

EI 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.

EI 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.

EI 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.

IEEE 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.

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.

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.

IETE TR'21 H. Wu, X. Zhang. Game-theoretic analysis to parameterized reversible watermarking. *IETE Technical Review*, vol. 38, no. 1, pp. 26-35, 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.

IEEE 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.

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.

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 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.

IEEE HPCC'22 H. Wu. Robust and lossless fingerprinting of deep neural networks via pooled membership inference. In: *Proc. IEEE International Conference on High Performance Computing and Communications*, pp. 1042-1049, 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.

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.

NeuCom'23 Z. Wang, G. Feng, H. Wu, X. Zhang. Data hiding during image processing using capsule networks. *Neurocomputing*, vol. 537, pp. 49-60, 2023.

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.

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.

NeuCom'23 M. Li, H. Wu, X. Zhang. A novel watermarking framework for intellectual property protection of NLG APIs. *Neurocomputing*, vol. 558, p. 126700, 2023.

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. 7342-7353, 2023.

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.

EI 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.

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*, Early Access, 2024.

IEEE TDSC'24 Y. Liu, H. Wu, X. Zhang. Robust and imperceptible black-box DNN watermarking based on Fourier perturbation analysis and frequency sensitivity clustering. *IEEE Transactions on Dependable and Secure Computing*, Early Access, 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.

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*, Early Access, 2024.

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 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*, Early Access, 2024.

IEEE TMM'24 Y. Qin, N. Pu, H. Wu, N. Sebe. Discriminative anchor learning for efficient multi-view clustering. *IEEE Transactions on Multimedia*, Early Access, 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*, Early Access, 2024.

Last updated: August 2024