

Wen-Chao (Vincent) Yang

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SKILLS

Project Management and System Analysis:

- Successfully planned and performed the “Campus e-Project” (80 million TWD) at Central Police University
- Successfully performed more than 8 system development projects
- Led engineers in defining clients’ inquiries for the use of campus systems

Forensic Science:

- Performed and assisted 15 image forensic cases
- Performed and assisted 3 digital forensic cases
- Performed and assisted 5 document forensic cases

Technical Skills:

- Inter-disciplinary Integration, Forensic Science, Steganography, Computer Aided Forensics. Camp Lecture Adviser
- Matlab, Python, SQL, Delphi

ACADEMIC AND WORK EXPERIENCE

- 08/2021 - Associate Professor**, *Dept. of Forensic Science, Central Police University*, Taoyuan, Taiwan
- Teaching Courses: Crime data mining and machine learning, Forensic multimedia processing, Digital evidence steganalysis, and Introduction to Computer
 - Provided forensic service for the criminal cases
- 01/2019 – Visiting Scholar**, *Department of Electrical and Computer Engineering, Old Dominion University*, Norfolk, Virginia, USA
- 01/2020**
- 08/2018 Visiting Scholar**, *Computational Intelligence and Brain Computer Interface Centre, University of Technology Sydney*, Sydney, Australia
- 02/2016 - Assistant Professor**, *Dept. of Forensic Science, Central Police University*, Taoyuan, Taiwan
- 07/2021**
- Teaching Courses: Crime data mining and machine learning, Forensic multimedia processing, Digital evidence steganalysis, and Introduction to Computer
 - Provided forensic service for the criminal cases
- 09/2015 - Visiting Scholar**, *The Henry C. Lee Institute of Forensic Science, University of New Haven*, West Haven, Connecticut, USA
- 10/2015**
- 06/2015 - Captain**, *Computer Center, Central Police University*, Taoyuan, Taiwan
- 01/2016**
- Management of campus information systems
 - Assisted in planning the information budget of the Ministry of the Interior
- 07/2011 - Vice Captain**, *Computer Center, Central Police University*, Taoyuan, Taiwan
- 05/2015**
- Analyzed system requirements and developed information system
 - Planning the information budget (15 million per year)
- 09/2007 - Technician**, *Computer Center, Central Police University*, Taoyuan, Taiwan
- 06/2011**
- Analyzed system requirements and developed information system
 - Enhanced system efficiency by 10%

- 12/2002 - **Lieutenant**, *Forensic Science Labs., Central Police University*, Taoyuan, Taiwan
- 08/2007
- Drafted laboratories management documentations.
 - Courses Assistant
- 07/1997 - **Assistant**, *Forensic Science Labs., Central Police University*, Taoyuan, Taiwan
- 11/2002
- Laboratories management.
 - Courses Assistant

EDUCATION

- 09/2004- **Ph.D. in Computer Science**, *National Chiao Tung University*, Hsinchu, Taiwan
- 12/2014
- Ph.D. dissertation: A study on reversible and lossless steganography
 - Relevant coursework: Computer Architecture, Algorithm, Steganography, and Artificial Intelligence
- 09/1999- **MBA in Information Management**, *National Central University*, Taoyuan, Taiwan
- 06/2002
- Master's thesis: The Research of Keeping Digital Evidence in Untrusted Local Area Network
 - Relevant coursework: Information Modeling, Enterprise Computer Networks, Software Engineering, and Intelligent Information Systems
- 09/1993- **B.A. in Criminal Investigation**, *Central Police University*, Taoyuan, Taiwan
- 06/1997
- Relevant coursework: Criminal Investigation, Crime Scene Investigation, Photography, Criminal Law, and Criminal Procedure Law

PARTICIPATION

- 2020- **Secretary General**, *Taiwan Academy of Forensic Sciences*
- 2019- **Supervisor**, *The Henry C. Lee Forensic Science Foundation*
- 2017-2020 **Supervisor**, *Taiwan Academy of Forensic Sciences*
- 2016-2018 **Course leader and adviser**, *CSI camp* (2 terms a year)
- 2003- **Life Member**, *The Chinese Cryptology and Information Security Association*
- 2002- **Member**, *Taiwan Academy of Forensic Sciences*

RESEARCH PROJECTS

- 2023-2026 Multimedia Forensics under the Strengthening Forensic Science in Response to Judicial Reform (Ministry of the Interior)
- 2022-2023 Third party inspection of X-ray image AI recognition (National Chung-Shan Institute of Science and Technology)
- 2020-2021 A study for deepfake video detection and prevention with AI collaborative analysis (MOST 109-2221-E-015-002 -)
- 2018-2020 A platform for tracing origins of digital image/video evidence with AI collaborative analysis (MOST 107-2221-E-015 -003 -MY2)
- 2017-2018 A studying and implementation of tracing origin framework of digital image/video evidences in Taiwan (MOST 106-2218-E-015-001 -)

PUBLICATION

Book

1. Chung-Hao Chen, Wen-Chao Yang, Lijian Chen, Technologies to Advance Automation in Forensic Science and Criminal Investigation, IGI Global, 2022.
DOI: 10.4018/978-1-7998-8386-9, ISBN13: 9781799883869, ISBN10: 1799883868, EISBN13: 9781799883883, ISBN13 Softcover: 9781799883876

Journal

1. Wen-Chao Yang, Jiajun Jiang, Austin Mao, Kai-An Su, Chung-Hao Chen, "The Study on The Estimation of Vehicles Speed Using A Dashboard Camera," *Multimedia Tools Applicat.*, under review.
2. Wen-Chao Yang, Jiajun Jiang, Chung-Hao Chen, "A Fast Source Camera Identification and Verification Method Based on PRNU Analysis for Use in Video Forensic Investigations," *Multimedia Tools Applicat.*, 80(5), pp. 6617–6638, 2021. (Published online: 2020, DOI: 10.1007/s11042-020-09763-z, SCI)
3. Wen-Chao Yang, "StarGAN Deepfake videos detection based on NRIQA and SVM," *Forensic Sci. J.*, vol. 20 no. 1, pp. 1-12, 2021
4. Wen-Chao Yang, Jhou-Chang Tsai, "Deepfake detection based on no-reference image quality," *Forensic Sci. J.*, vol. 19 no. 1, pp. 29-38, 2020.
5. Wen-Chao Yang, Long-Huang Tsai, Chung-Hao Chen, "Applying the Sensor Noise based Camera Identification Technique to Trace Origin of Digital Images in Forensic Science," *Forensic Sci. J.*, vol. 16, no. 1, pp. 19-42, 2017.
6. Wen-Chao Yang, Te-Chi Lo, Chung-Hao Chen, "Applying Memory Forensic Technique in Popular Browsers to Assist Criminal Investigation in the Cloud," *Forensic Sci. J.*, vol. 16, no. 1, pp. 43-50, 2017.
7. W. C. Yang and L. H. Chen, "A steganographic method via various animations in PowerPoint files," *Multimedia Tools Applicat.*, vol. 74, no. 3, Feb. 2015, pp. 1003-1019. (Published online: 1 October 2013, DOI:10.1007/s11042-013-1708-1, SCI)
8. W. C. Yang and L. H. Chen, "Reversible DCT-based data hiding in stereo images," *Multimedia Tools Applicat.*, vol. 74, no. 17, pp. 7181–7193, Sep. 2015. (Published online: 23 March 2014, DOI:10.1007/s11042-014-1958-6, SCI)
9. W. C. Yang, L. H. Chen and C. H. Lee, "A difference expansion based reversible data hiding algorithm using edge-oriented prediction," *Int. J. Security Its Applicat.*, vol.8, no. 6, Nov. 2014. (EI)
10. Che-Yen Wen, Hsuan-Hsiao Chen, Chao-Kuo Lin, Wen-Chao Yang, "A Study of Applying Light Detection and Ranging (LIDAR) to Crime Scene Documentation," *Forensic Sci. J.*, vol. 12, no. 1, pp. 31-46, 2013.

Conference

1. Wen-Chao Yang, Tzu-Huan Lin, "Source camera identification in LINE social network via CCD fingerprint," in *Proc. The 2020 13th International Congress on Image and Signal Processing, BioMedical Engineering and Informatics (CISP-BMEI 2020)*, 2020, Online, ISBN 978-0-7381-0544-4, DOI: 10.1109/CISP-BMEI51763.2020.9263557. (EI)
2. Hsin-Chuan Chiu, Chung-Hao Chen, Wen-Chao Yang, Jiajun Jiang, "Automatic Full and Partial Shoeprint Retrieval System for Use in Forensic Investigations," in *Proc. The 2019 12th International Congress on Image and Signal Processing, BioMedical Engineering and Informatics (CISP-BMEI 2019)*, Huaqiao, Jiangsu, China, Oct. 19-21, 2019. (EI)
3. Wei-Wen Hsu, Min Zhang, Chung-Hao Chen, Wen-Chao Yang, "The use of deep learning and mean shift to learn global and local processing in human visual perception," in *Proc. IEEE International Conference on Systems, Man, and Cybernetics (SMC)*, Budapest, Hungary, Oct. 9-12, 2016. (EI)

OTHER

Languages: Mandarin (native), English (conversational), Hokkien (conversational)

Interests: Basketball, Reading, Logical Analysis

References: <https://fs.cpu.edu.tw/p/406-1016-24749,r653.php>

Update: 2023/6/29