

國立陽明交通大學電信工程研究所

系統組論文研討

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Artificial Intelligence and Error Correcting
Code Assisted Iris Schemes with High-level
Information Security and Recognition Accuracy

日期: 114年12月3日 (星期三)
時間: 13:20~15:20
地點: 工程四館219室

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Abstract

The Internet of Things (IoT) has become a fundamental element in the evolution of next-generation mobile communication systems. Consequently, information security, particularly in the fields of identity recognition and verification, emerged as a crucial research focus.

This work presents our latest developments in iris biometric systems, which achieve high verification accuracy, robust cross-domain attack resistance with low error rates, and a large secure-bit capacity for reliable authentication. These results are made possible through the integration of artificial intelligence-based feature extraction and error-correcting code-aided protection mechanisms, ensuring both security and reliability in biometric authentication for future communication networks.

Biography

Yen-Ming Chen received the B.S. degree in electrical and control engineering from National Chiao Tung University, Hsinchu, Taiwan, in 2004, the M.S. degree (Hons.) in communications engineering from National Central University, Jhongli, Taiwan, in 2006, and the Ph.D. degree in electrical engineering from National Tsing Hua University (NTHU), Hsinchu, Taiwan, in 2011.

From 2011 to 2014, he was a Postdoctoral Research Fellow in the Department of Electrical Engineering at NTHU, Hsinchu, Taiwan. He then served as an Assistant Professor in the Department of Electronic Engineering at Chung Yuan Christian University, Taoyuan, Taiwan, from 2014 to 2016. From 2017 to 2025, he was with National Sun Yat-sen University, Kaohsiung, Taiwan, where he held a faculty position in the Institute of Communications Engineering and was promoted to Professor. Since 2025, he has been with the Institute of Communications Engineering at National Yang Ming Chiao Tung University, Hsinchu, Taiwan, where he is currently an Associate Professor. His research interests include error-correcting codes, coded modulation, non-orthogonal multiple access, and biometrics. In 2020, Prof. Chen received the Best Paper Award for Young Scholars from the IEEE IT/COM Society Taipei/Tainan Chapters, as well as the Best Young Professional Member Award from the IEEE Tainan Section. In 2024, his research achieved further recognition with the Young Scholar Award from the College of Engineering at NSYSU and the Hon Hai Technology Award.