



# **Advances in Artificial Intelligence and Security [ :7th International Conference, ICAIS 2021, Dublin, Ireland, July 19-23, 2021, Proceedings, Part I /**

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The 3-volume set CCIS 1422, CCIS 1423 and CCIS 1424 constitutes the refereed proceedings of the 7th International Conference on Artificial Intelligence and Security, ICAIS 2021, which was held in Dublin, Ireland, in July 2021. The total of 131 full papers and 52 short papers presented in this 3-volume proceedings was carefully reviewed and selected from 1013 submissions. The papers were organized in topical sections as follows: Part I: artificial intelligence; Part II: artificial intelligence; big data; cloud computing and security internet; Part III: cloud computing and security; encryption and cybersecurity; information hiding; IoT security.

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**Contenido:** Artificial Intelligence -- A Load Balancing Mechanism for a Multi-Controller Software Defined WiFi Network -- HGC:Hybrid Gradient Compression in Distributed Deep Learning -- Application of Lidar INS Integrated Positioning in Automatic Driving -- A Review of Named Entity Recognition in Chinese Medical Text -- Robust liver vessel extraction using DV-Net with D-BCE loss function -- Cloud computing-based graph convolutional network power consumption prediction method -- Intelligent Intrusion Detection of Measurement Automation System Based on Deep Learning -- LSTM-Exploit: Intelligent Penetration Based On LSTM Tool -- Pig target detection from image based on improved YOLO V3 -- ICPM: An Intelligent Compound Prediction Model Based on GA and GRNN -- A new method of halftoning and inverse halftoning based on GAN Network -- Sow Estrus Diagnosis from Sound Samples based on Improved Deep Learning -- Research on YOLO Model and its application in Fault Status recognition of freight trains -- Feedforward Deep Neural Network-Based Model for the Forecast of Severe Convective Wind -- Asynchronous Compatible D-ML System for Edge Devices -- Ball K-Medoids: Faster and Exacter -- GVNP: Global Vectors for Node Representation -- Investigation on Loan Approval Based on Convolutional Neural Network -- Chinese Verb-Object Collocation Knowledge Graph Construction and Application -- Optimal Deployment of Underwater Sensor Networks Based on Hungarian Algorithm -- Discrete Multi-Height Wind Farm Layout Optimization for Optimal Energy Output -- Multilevel Threshold Image Segmentation Based on Modified Moth-flame Optimization Algorithm -- Research on critical illness fundraising methods based on blockchain and smart contracts -- Collaboration Energy Efficiency with Mobile Edge Computing for Data Collection in IoT -- Improving the Transformer Translation Model with Back-Translation -- Rigid Image Registration based on Graph Matching -- A Multi-scale Fusion Method For Dense Crowd Counting -- Chinese text classification based on adversarial training -- Research on SVM Parameter Optimization Mechanism Based on Particle Swarm Optimization -- A parameter selection method based on reinforcement learning: the QoS-privacy trade-off for adversarial training framework -- Word Research on Sentiment Analysis of Foreign News Reports Concerning China Based On the Hybrid Model of Opinion Sentence and BLSTM-Attention -- Cascaded Convolutional Neural Network for Image Super-Resolution -- Risk Probability Forecast Technology of the Gust in Beijing Winter Olympic Games based on the Theory of Digital Image Processing -- Depth estimation based on optical flow and depth prediction -- The Algorithms for Word Segmentation and Named Entity Recognition of Chinese Medical Records -- Temperature forecasting based on LSTM in coastal city -- Recent Progress of Medical CT Image Processing based on Deep Learning -- Road Damage Detection and Classification based on M2det -- Weather Temperature Prediction Based on LSTM-Bayesian Optimization -- Research Situation and Development Trends of Deep Learning application in Meteorology -- Exploiting Spatial-Spectral Feature for Hyperspectral Image Classification based on 3-D CNN and Bi-LSTM -- Automated Methods for Symptom Normalization in Traditional Chinese Medicine Records -- A Nested Named Entity Recognition Method for Traditional Chinese Medicine Records -- Face Feature Extraction and Recognition Based on Lighted Deep Convolutional Neural Network -- Non-Orthogonal Multiple Access is Used for Power Allocation to Maximize Throughput in Cognitive Radio Network Systems -- Research on Drug Response Prediction Model Based on Big Data -- A Cross-Modal Image-Text Retrieval System with Deep Learning -- Research on Behavioral Decision Reward Mechanism of Unmanned Swarm System in Confrontational Environment -- A Variable Step-Size based Iterative Algorithm for High-precision Ranging using FMCW Radar -- Research on the Smart Management and Service of Smart

Classrooms in Colleges and Universities -- Performance Analysis of Hard Fusion Rules in Cognitive Radio Networks over Composite Channels -- Performance Analysis of Spectrum Sensing in Cognitive Radio Networks Based on AD Goodness of Fit under Noise Uncertainty -- Research on Prediction Algorithm for Heavy Overload of Main Equipment in Distribution Network -- Review of Attention Mechanism in Electric Power Systems -- Comprehensive review of intelligent operation and maintenance of power system in China -- An Incremental Learning Method for Fault Diagnosis Based on Random Forest -- Research on Short-term Flow Forecast of Intelligent Traffic -- Research on Stock Price Forecasting Based on BP Neural Network -- Trust Computing Model of online transaction based on Social Network and Mobile Agent -- An Adaptive Momentum Term based Optimization Method for Image Restoration -- Research on Situational Awareness Security Defense of Intrusion Link Based on Data Element Characteristic Network Transmission Signal -- Research on Proofreading Method of Semantic Collocation Error in Chinese.

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