

2023 27th International Computer Science and Engineering Conference (ICSEC 2023)

**Samui Island, Thailand
14-15 September 2023**



**IEEE Catalog Number: CFP23IBE-POD
ISBN: 979-8-3503-4211-6**

**Copyright © 2023 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

| | |
|-------------------------|-------------------|
| IEEE Catalog Number: | CFP23IBE-POD |
| ISBN (Print-On-Demand): | 979-8-3503-4211-6 |
| ISBN (Online): | 979-8-3503-4210-9 |
| ISSN: | 2381-5035 |

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com



Table of Contents

| | |
|---|-----|
| Backorder Prediction in Inventory Management: Classification Techniques and Cost Considerations | 1 |
| Representing Source Movement in Sequences of Telescopic Images Based on Contrastive Learning for Asteroid Detection | 9 |
| Automatic Oral View Classification in the Photographic Images | 15 |
| Oral Tissue Detection in Photographic Images Using Deep Learning Technology | 21 |
| Marathi Speech Quality Assessment | 28 |
| Efficient Numerical Computation of the Integral Equation for the Ruin Probability | 37 |
| Human Action Recognition by Deep Learning Technique With Multiple-Searching Genetic Algorithm | 42 |
| An Implementation of ICD Coding for Bi-Lingual Medical Records Using Deep Learning | 47 |
| Exploring Chromatin Interaction Between Two Human Cell Types and Different Normalization Techniques for HI-C Data | 53 |
| What Type of Advice Does Change Decisions on Moral Dilemma Effectively? | 60 |
| An Integrated Technique for Detecting Seven Segment Digits on Medical Devices | 65 |
| A Phase Difference Angle Detection System Through MQTT Protocol in Monitoring Induction Motor Using ESP32 | 69 |
| AXREL: Automated Extracting Registry and Event Logs for Windows Forensics | 74 |
| KruCode: An Online Learning Programming Platform for Programming Course | 79 |
| From Positive Feedback to Comprehensive Rating: An Auto-Rating Models for Online Fictions in Sharing Communities | 85 |
| Prototyping a Low-Cost Pest Detection System for CNT0718-26-1-1-1 Rice Farming | 94 |
| Efficiency Measurement of Energy Yield From Solar Photovoltaic Cell With Embedded System of Alternative Clamp Meter | 98 |
| Osteoporosis Prognosis Through Machine Learning Analysis of X-Ray Films | 104 |
| Fast and Accurate Bolt Classification for a Retail Motorcycle Shop in Thailand | 110 |



The 27th International Computer Science and Engineering
Conference 2023 (ICSEC 2023)
13-15 September 2023



| | |
|---|-----|
| Visual Glitches Classification for Video Game Using Deep Learning-Based Techniques | 116 |
| A Dual-Stage Optimal Controller Design for Controlling AVR System | 122 |
| Transformation of Kripke Structure With Linear Temporal Logic Formula to Büchi Automata | 127 |
| Blockchain in Healthcare: A Case Study of Healthcare Insurance | 132 |
| Modified YOLO Model for Small Platform Application Using SimRepCSP Module With Case Study: Objects Detection Model on GlobalWheat2020 Dataset | 138 |
| Effects of Facial Expressions and Parts on Changes in Facial Attractiveness by Brief Presentation | 143 |
| Improving the Performance of K-Means Clustering to Reduce Repetitive Work by Addressing the Gap in Findings | 148 |
| Proposed Technique for Data Security With the AES Algorithm in Robot Operating System (ROS) | 153 |
| Pneumonia Detection Using Snapshot Ensemble Model | 157 |
| Securing Patient Confidentiality in EHR Systems: Exploring Robust Privacy and Security Measures | 163 |
| From Individuals to Collectives: Investigating Traffic Flow Dynamics in the Totally Asymmetric Exclusion Process With Driver Behaviour | 169 |
| The Low-Cost IoT Monitoring the Quality of River: A Case Study of Wang River in Lampang Municipality | 178 |
| Traceability in the Instant Herbal Compress Ball Supply Chain | 184 |
| Long-Term Care System for Individual With Disabilities in Bandu Municipality, Chiang Rai | 189 |
| Generating Synthetic Population Using Transformer Based Networks | 193 |
| Predicting Game Results for Football League Using Deep Learning | 201 |
| Applying IoT Technology to Develop Banana Slicer for Digital Banana Processing | 207 |
| The Promoting Vegetable Cultivation Pesticide Free for Food Security and Safety Through Precision Agriculture: A Case Study of Ban Pang Klang, Mae Korn Subdistrict, Muang District, Chiang Rai | 213 |
| Do Fictive Sexual Orientations Induce In-Group Bias in Emotion Recognition? | 220 |
| A Blockchain-Based Ticket Sales Platform | 226 |
| Data Modeling for Identification and Classification of Learning Outcomes in Flexible Educational Learning Units | 231 |



**The 27th International Computer Science and Engineering
Conference 2023 (ICSEC 2023)
13-15 September 2023**



| | |
|---|-----|
| Service Issues of Chiang Mai Chinese Restaurants to Chinese Tourists Based on Text Analysis and Sentiment Analysis | 237 |
| Improving Detection of SQL Injection Attack by SMOTE | 243 |
| CID-CJA: Co-Occurrence Information Discovery in Computer-Related Job Advertisements | 247 |
| Automatic Severity Grading of Optic Disc Edema Using Appearance- Based Features | 253 |
| Development of Autonomous Drones to Detect Diseases on Plant Leaves of Durian Trees | 258 |
| Guidance System for Visually Impaired Persons Using Deep Learning and Optical Flow | 266 |
| Analysis of Advanced 2D Convolution in Image Processing by Using AVX and OpenMP | 272 |
| Inter Subject Emotion Recognition Using Spatio-Temporal Features From EEG Signal | 277 |
| Human-Computer Interaction for Decision Making in Digital Twins With Various Display Environments | 281 |
| Accurate and Decentralized Approach for Traffic Flow Prediction Using Federated Learning | 287 |
| Optimizing Task Scheduling Algorithms for Efficient CPU Utilization in Enhancing Server Availability | 293 |
| Chatbot for University Students Major Determination With Rasa Framework | 299 |
| A Best Practice Model of CDIO Implementation in IT Classrooms Gamification: Crowdsourcing Approach | 304 |
| Salted Crab Grading Using Computer Vision | 310 |
| Evaluation of Traditional Finance Models and Machine Learning Approaches in FOREX Volatility Prediction | 315 |
| Ethics in AI Governance: Comparative Analysis, Implication, and Policy Recommendations for the Philippines | 319 |
| Classification of Pineapple Fiber Woven Fabrics on Raspberry Pi Based on Convolutional Neural Network | 327 |
| Offline Interactive Map From Hybrid App Development: A Case From Geologic Map App | 331 |
| Quality Assessment of Cocoa Bean Using Regression Convolutional Neural Network | 335 |
| Handling Various Conditions in a Web Service Client's Method by Using the Visitor Design Pattern | 341 |



The 27th International Computer Science and Engineering
Conference 2023 (ICSEC 2023)
13-15 September 2023



| | |
|---|-----|
| Automated Ensemble Deep Learning for Chest X-Ray Covid-19 Image Classification Using Multiple Hyperparameter Optimizations | 348 |
| Thermal Inspection System Prediction for Circuit Breaker on Load Panel With Image Classification Technique by Tensorflow: A Case Study Textile Industry | 354 |
| Leveraging Machine Learning for Estimating Relationship Model Through Empirical Scientific Data | 358 |
| Ballet Gesture Recognition and Evaluation System (Posé Ballet): System Thinking, Design Thinking, and Dynamic Improvement in Three Versions | 362 |
| Comparing and Normalizing the Measurement of Step Counts and Heart Rates of Selected Wristbands and Smartwatches | 371 |
| Web Service for Palindrome Detection From Algorithm Sequence | 377 |
| A Comprehensive Framework for Cold Start Problem in Hybrid Recommendation Systems Extending the Efficient Multi-Mode Approach | 382 |
| VIS Spectrometer Based on the Diffraction Grating and Raspberry Pi Camera | 392 |
| The Development of a Web Service for Tandem Repeat Detection | 398 |
| A Secure Model Based on Symmetric Encryption for REST API in Data Integration | 402 |
| Enhanced Architecture of Convolutional Neural Network (CNN) for Intracranial Hemorrhage Prediction From CT-Scan Images | 407 |
| Foot Photo Application for Diabetes People | 415 |
| GENSS: Defect Classification Method on Extremely Small Datasets for Semiconductor Manufacturing | 419 |
| Overcoming Imbalanced Data Challenges in Spinal Disorder Detection: An Integrated YOLOv5 and CNNs Approach With SMOTE | 425 |
| Mobile Application for Triage Medical System in Emergency Rooms: Enhancing Accuracy and Attitude - A Case Study in Hospitals of Chiang Mai Province | 429 |
| Applying GIS Analytics and ADAS With DMS to Assessment Heavy-Duty Vehicles Unsafe Acts and Unsafe Conditions in Thailand | 434 |
| Data-Driven Performance Assessment and Knowledge Management for Sustainable Supply Chain of Organic Gymnema Tea: A Case Study in Northern Thailand's Mountainous Region | 440 |
| Revolutionized Customs Declaration Documents Preparation Process | 444 |
| Cognitive Performance Evaluation in Early Stage of Dementia: A Hybrid EEG/Eye Movement Analysis | 453 |
| Integration of Maritime Management System to Reduce co2 Emission in Sustainable | 457 |



**The 27th International Computer Science and Engineering
Conference 2023 (ICSEC 2023)
13-15 September 2023**



| | |
|--|-----|
| Trajectory-Based Convergence Acceleration of Evolutionary Algorithms | 461 |
| Using Telematics and AI Technology to Reduce Road Accidents for Heavy-Duty Vehicles | 466 |
| Virtual Tour Technology Innovation to Increase the Potential of Ethnic Homestay Tourism in Mae Hong Son Province | 471 |
| Database System Development for Food Safety Management of UHT Milk at Chiangmai Fresh Milk Factory Using Blockchain Technology | 477 |