

# **2024 8th International Artificial Intelligence and Data Processing Symposium (IDAP 2024)**

**Malatya, Turkiye  
21-22 September 2024**

**Pages 1-656**



**IEEE Catalog Number: CFP24K37-POD  
ISBN: 979-8-3315-3150-8**

**Copyright © 2024 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:    | CFP24K37-POD      |
| ISBN (Print-On-Demand): | 979-8-3315-3150-8 |
| ISBN (Online):          | 979-8-3315-3149-2 |

**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](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

CURRAN ASSOCIATES INC.  
**proceedings**  
.com

# TABLE OF CONTENTS

|                                                                                                                                                             |    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| Comparative Analysis of SSD and Faster R-CNN in UAV-Based Vehicle Detection .....                                                                           | 1  |
| <i>Kristine S. Hansen, Frederikke M. Bruun, Funda Sermsar, Mette Nygaard, Merve Koca</i>                                                                    |    |
| Analysis of LSTM, BiLSTM, and CNN Methods for Environmental Sound Identification in Smart Cities.....                                                       | 7  |
| <i>Yusuf Y. Ali, Orhan Yaman</i>                                                                                                                            |    |
| Analysis of Global Language Dynamics: A Cross-Cultural Examination of the Most Spoken Languages and Perceived Learning Ease .....                           | 13 |
| <i>Salma Ouhsousou, Özgür Tonkal</i>                                                                                                                        |    |
| A Deep Learning-Based Framework for Handling Incompleteness and Detecting Errors in Linked Data Applied to the UniProt Dataset .....                        | 19 |
| <i>Oussama Hamel, Messaouda Fareh</i>                                                                                                                       |    |
| SSA-Sparse MHD: Singular Spectrum Analysis Paired with Sparse Maximum Harmonics Deconvolution for Detecting Feeble Defect Signals in Industrial Robots..... | 27 |
| <i>Riyadh N. Ali Algburi, Hakim S. S. Aljibori, Zaid Al-Huda, Khalid M. Sowoud, Redhwan Algabri, Mugahed A. Al-Antari</i>                                   |    |
| Classification of Hookah Images with Deep Learning.....                                                                                                     | 36 |
| <i>Mustafa T. Arslan, Emrah Özkaynak</i>                                                                                                                    |    |
| Detecting Red Pine Seedlings with YOLOv8: A Labeling Method Comparison .....                                                                                | 42 |
| <i>Ramazan Akkurt, Semih Kahveci, Zeki Yetgin, Erdinç Avaroglu, Hakan Keles</i>                                                                             |    |
| Detection of Phytophagous Mite Induced Damage in Tea Plant by Image Processing and Deep Learning Techniques.....                                            | 48 |
| <i>Murat Tören, Mustafa Akiner, Bengisu Kaba, Feyza Yazici, Berkutay Asan, Fatih Beris</i>                                                                  |    |
| Artificial Intelligence Based Smart Agriculture Applications in Greenhouses.....                                                                            | 56 |
| <i>Gözde S. Karabay, Mehmet Çavas</i>                                                                                                                       |    |
| Modification of False-Position Method to Improve Its Convergence .....                                                                                      | 64 |
| <i>Önder H. Bettemir</i>                                                                                                                                    |    |
| AI-Based Multimodal Resume Ranking Web Application for Large Scale Job Recruitment.....                                                                     | 70 |
| <i>Mehmet B. Yazici, Damla Sabaz, Wisam Elmasry</i>                                                                                                         |    |
| A Novel AI-Based Hybrid Ensemble Segmentation CAD System for Lumbar Spine Stenosis Pathological Regions using MRI Axial Images.....                         | 78 |
| <i>Saied Salem, Raza Mukhlis, Oguzhan Katar, Bilal Ertugrul, Ozal Yildirim, Mugahed A. Al-Antari</i>                                                        |    |
| Design and Development of a Low-Cost Pi-Duino Ventilator: An Affordable Respiratory Support in Resource-Limited Settings .....                              | 83 |
| <i>Edgardo R. B. Sajonia, Jeffrey T. Dellosa, Alexander P. Demetillo, Nelvin I. Cuaton, Joven J. Yangson, Anamarie P. Sajonia</i>                           |    |
| Hybrid Tokenization Strategy for Turkish Abstractive Text Summarization.....                                                                                | 90 |
| <i>Nihal Z. Kayali, Sevinç I. Omurca</i>                                                                                                                    |    |

|                                                                                                                                                                |     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Selecting the Best Frames from Videos for Palmprint Biometric Verification .....                                                                               | 96  |
| <i>Salih Türk, Özkan Bingöl, Ramazan Ö. Dogan</i>                                                                                                              |     |
| Enhancing Forest Fire Detection: Utilizing VGG16 for High-Accuracy Image Classification and Machine Learning Integration .....                                 | 101 |
| <i>Muhammet Tan, Halit Bakir</i>                                                                                                                               |     |
| HHLP-SSA: Enhanced Fault Diagnosis in Industrial Robots using Hierarchical Hyper-Laplacian Prior and Singular Spectrum Analysis .....                          | 110 |
| <i>Riyadh N. Ali Algburi, Hakim S. S. Aljibori, Zaid Al-Huda, Khalid M. Sowoud, Redhwan Algabri, Mugahed A. Al-Antari</i>                                      |     |
| Design a Boost DC-DC Switching Luo Converter with a Single MOSFET Switch .....                                                                                 | 118 |
| <i>Mohammed Jouda, Mohammed Wadi</i>                                                                                                                           |     |
| Transfer Learning-Based Classification of Kidney Stone from Computed Tomography Images.....                                                                    | 124 |
| <i>Hanife Göker</i>                                                                                                                                            |     |
| Recent Reputation-Based Security Approaches for VANETs.....                                                                                                    | 131 |
| <i>Ipek Abasikeles-Turgut</i>                                                                                                                                  |     |
| Fine-Tuning ECAPA-TDNN for Turkish Speaker Verification .....                                                                                                  | 137 |
| <i>Selim C. Demirtas, Cemal Hanilçi</i>                                                                                                                        |     |
| Artificial Intelligence-Based Sentiment Analysis in Project Tracking Software Jira .....                                                                       | 142 |
| <i>Merve Emen, Mehmet Z. Konyar</i>                                                                                                                            |     |
| Fault Location Prediction in Power Transmission Lines using an Artificial Neural Network Model .....                                                           | 147 |
| <i>Feyyaz Alpsalaz, Zehva Yalçınöz, Asim Kaygusuz, Mehmet S. Mamis</i>                                                                                         |     |
| Classification of Eye Diseases using Machine Learning with Preprocessing.....                                                                                  | 153 |
| <i>Halil I. Tuncer, Dogay Altinel</i>                                                                                                                          |     |
| The Language Model Revolution: LLM and SLM Analysis .....                                                                                                      | 160 |
| <i>Zeynep Örpek, Büsra Tural, Zeynep Destan</i>                                                                                                                |     |
| NLP in FinTech: Developing a Lightweight Text-to-Chart Application for Financial Analysis.....                                                                 | 164 |
| <i>Simge Yildirim, Yunus Santur, Murat Aydogan</i>                                                                                                             |     |
| Development of an Artificial intelligence-PLC Temperature Controller for a Cement Factory for Decreasing Contamination .....                                   | 170 |
| <i>Riyadh N. Ali Algburi, Hakim S. S. Aljibori, Zaid Al-Huda, Khalid M. Sowoud, Redhwan Algabri, Mugahed A. Al-Antari</i>                                      |     |
| Optimizing Feedback Recommendation in Smart Training Framework using NLP .....                                                                                 | 180 |
| <i>P. Pavankumar, A. S. S. Kumar, A. Raja Shekar, V. V. Appaji</i>                                                                                             |     |
| RESTful Servislerin Test Girdilerinin Geçerliliğinin Tahmin Edilmesinde Kullanılan Derin Sinir Ağı Temelli Yöntemin Hiper Parametrelerinin Optimizasyonu ..... | 187 |
| <i>Omur Sahin</i>                                                                                                                                              |     |
| Feature Selection and Detection of COPD using Automatic Programming Methods .....                                                                              | 191 |
| <i>Hüseyin Karaca, Sibel Arslan</i>                                                                                                                            |     |
| Optimum Allocation and Sizing of Storages with Multi-Objective Grey Wolf Optimizer .....                                                                       | 196 |
| <i>Gunnur Yesilyurt, Cenk Andic, Esra Aydin, Belgin Turkay</i>                                                                                                 |     |

|                                                                                                                                                                |     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Deep Learning Based Mobile Platform for Predicting Passenger Congestion in Public Transportation.....                                                          | 203 |
| <i>Abdulkerim Kavanoz, Halil I. Kosak, Isil K. Aksakalli, Levent Bayindir</i>                                                                                  |     |
| Enhancing Question Answering Systems Through Optimal Hyperparameter Tuning in GRU .....                                                                        | 209 |
| <i>Berrin Islek, Ramazan Katirci, Hilal Çelik</i>                                                                                                              |     |
| Performance Analysis of Quantum and Classical Machine Learning Models for Feature Selection and Classification of the Diabetes Health Indicators Dataset ..... | 216 |
| <i>Sevdanur Genç</i>                                                                                                                                           |     |
| Spiking Neural Network Model for Detection Spoofing Attacks in Vehicular Ad-Hoc Networks .....                                                                 | 223 |
| <i>Sercan Yalçın</i>                                                                                                                                           |     |
| Effects of Different Optimizations at Detection of Vehicles and Pedestrians with YOLOv8 .....                                                                  | 228 |
| <i>Ecem İren</i>                                                                                                                                               |     |
| Obtaining the Dominating Set in Graphs with the Invasive Weed Optimization Algorithm .....                                                                     | 234 |
| <i>Seyda Karci, Gozde K. Baydogmus</i>                                                                                                                         |     |
| Cosmos-LLaVA: Chatting with the Visual .....                                                                                                                   | 239 |
| <i>Ahmed Zeer, Eren Dogan, Yusuf Erdem, Elif Ince, Osama Shbib, M. Egemen Uzun, Atahan Uz, M. Kaan Yuce, H. Toprak Kesgin, M. Fatih Amasyali</i>               |     |
| Artificial Intelligence-Based Pose Estimation Model for Anatomical Landmark Detection in Lateral Cephalometric X-Rays .....                                    | 246 |
| <i>Muhammet Ü. Öziç, Bilal Gelincik</i>                                                                                                                        |     |
| IoT-Based Energy Monitoring System (IBEMS) for Optimizing Power Consumption in University Facilities .....                                                     | 253 |
| <i>Joss E. B. Monton, Jeffrey T. Dellosa, Ronieto N. Mendoza</i>                                                                                               |     |
| Single Input Interval Type-3 Fuzzy PID Controller Approach .....                                                                                               | 259 |
| <i>Ihsan Sahin, Cenk Ulu</i>                                                                                                                                   |     |
| AppleSENet: Apple Leaf Disease Classification using Lite SE-Network .....                                                                                      | 265 |
| <i>Özge N. Özaras, Asuman G. Yilmaz, Eyüp Gedikli</i>                                                                                                          |     |
| Mining High Average-Efficiency Itemsets .....                                                                                                                  | 270 |
| <i>Irfan Yildirim</i>                                                                                                                                          |     |
| A Statistical Feature Extractor-Based Method using Row and Column Grid for Monkeypox Detection .....                                                           | 276 |
| <i>Irfan Kilic, Orhan Yaman</i>                                                                                                                                |     |
| Exploring the Intention to Adopt Mining-Stages VR Application using Modified UTAUT Model: A Perspective of the Philippine Mining Sector .....                  | 281 |
| <i>Elbert S. Moyon, Jaymer M. Jayoma, Edsel M. O. Morales</i>                                                                                                  |     |
| A Simple and Accurate PPG Systolic Peak Detector Based on Fractional Order Calculus .....                                                                      | 287 |
| <i>Salah Ferdi, Fayçal Abdelliche</i>                                                                                                                          |     |
| Automated Segmentation of Dental Structures in Panoramic Radiographs using U-Net 3+ .....                                                                      | 292 |
| <i>Muhammet E. Sahin, Hasan Ulutas, Enes E. Süzgen</i>                                                                                                         |     |
| Performance Assessment of Temporal Frame Size in Stock Price Prediction .....                                                                                  | 298 |
| <i>Mustafa O. Duman, Mehmet E. Tagluk</i>                                                                                                                      |     |

|                                                                                                                                     |     |
|-------------------------------------------------------------------------------------------------------------------------------------|-----|
| Enhancing Software Defect Prediction Through Explainable AI: Integrating SHAP and LIME in a Voting Classifier Framework.....        | 303 |
| <i>Burçak Asal, Merve Ö. Demir</i>                                                                                                  |     |
| Design of Fixed Wing Autonomous Figting UAV.....                                                                                    | 310 |
| <i>Evren Daglarli, Erke Aribas</i>                                                                                                  |     |
| Multi-Classification of Depression Levels Based on Blood Biomarkers .....                                                           | 316 |
| <i>Rahmi Kavak, Selma A. Özel, Sema Polat, Sinan Özler</i>                                                                          |     |
| AI – Supported Collective Security System .....                                                                                     | 322 |
| <i>Hasan T. Ünal, Arif F. Mendi, Özgür U. Vurgun, Ömer Özkan, Mehmet A. Nacar</i>                                                   |     |
| Human-Machine Interface Design for Industrial Robots.....                                                                           | 328 |
| <i>Yunus F. Öztürk, Kerim Uslu, Kadir Acar, Dilek B. Tükel</i>                                                                      |     |
| Automated Depression Detection from Tweets: A Comparison of NLP Techniques.....                                                     | 333 |
| <i>Emirhan Balci, Esra Saraç</i>                                                                                                    |     |
| Real-Time Error Detection in Digital Games Based on the YOLO V10 Model.....                                                         | 338 |
| <i>Mehmet Savran, Hasan Bulut</i>                                                                                                   |     |
| YOLOv7 Versus YOLOv8: A Comparative Study on Traffic Sign Detection Accuracy in Real-World Images.....                              | 343 |
| <i>Witold Wojciechowski, Leslaw M. Nowakowska, Zofia G. Zajac, Walenty J. Kaczmarek, Ilayda Boz</i>                                 |     |
| Artificial Intelligence Revolution in Turkish Health Consultancy: Development of LLM-Based Virtual Doctor Assistants.....           | 348 |
| <i>Muhammed K. Bulut, Banu Diri</i>                                                                                                 |     |
| Feature Selection using Automatic Programming Methods in Hypertension Risk Prediction .....                                         | 354 |
| <i>Merve Yagmurcu, Sibel Arslan</i>                                                                                                 |     |
| Performance Comparison of Deep Learning Architectures for Skin Cancer Classification .....                                          | 360 |
| <i>Onur Sahin, Mehmet S. Yildirim</i>                                                                                               |     |
| Sonar Signal Classification Through Dimensionality Reduction and Artificial Intelligence: A Comparative Study .....                 | 368 |
| <i>Leo T. Ramos, Mike Bermeo, Isidro R. Amaro</i>                                                                                   |     |
| PV Systems Efficiency Evaluation using Machine Learning Techniques .....                                                            | 376 |
| <i>Mohammed Wadi, Mohammed Jouda, Mohammed Salemdieb, Nour Husain</i>                                                               |     |
| Design and Development of a Portable Shoulder Rehabilitation Robot.....                                                             | 383 |
| <i>Baris Parlak, Nida N. Demircioglu, Ahmet N. Baytug, Berk Sen, Mehmet E. Aktan, Erhan Akdogan</i>                                 |     |
| Comparison of Loss Functions in the KarciFANN Method .....                                                                          | 387 |
| <i>Hülya Saygili, Meral Karakurt, Ali Karci</i>                                                                                     |     |
| Monitoring Post-Earthquake Search and Rescue Operations Through UAVs Vision: Teams, Equipment and Structural Damage Detection ..... | 392 |
| <i>Rabia Kiratli, Alperen Eroglu</i>                                                                                                |     |
| Super-Resolution Based ROI Enhancement Approaches for Palmprint Recognition.....                                                    | 399 |
| <i>Hüseyin F. Macan, Özkan Bingöl, Salih Türk, Murat Ekinici</i>                                                                    |     |

|                                                                                                                                                  |     |
|--------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Integration of Pre-Processing and Machine Learning Methods for Improved Customer Segmentation .....                                              | 404 |
| <i>Semih Rahmet, Filiz Gürkan</i>                                                                                                                |     |
| MelanoTech: Development of a Mobile Application Infrastructure for Melanoma Cancer Diagnosis Based on Artificial Intelligence Technologies ..... | 410 |
| <i>Nazli Tokatli, Yakuphan Bilmez, Gürkan Göztepeli, Muhammed Güler, Furkan Karan, Halis Altun</i>                                               |     |
| Mesh Analysis of Elevation Angle Estimation via RF Signal Phase in Linear Array Antennas.....                                                    | 416 |
| <i>Berke C. Turan, Nurhan Günes, Hüsnü D. Basdemir</i>                                                                                           |     |
| Deep Learning-Based Turkish License Plate Recognition System on Low-Power Microcontroller Systems.....                                           | 420 |
| <i>Emre Görgülü, Ahmet R. Özcan</i>                                                                                                              |     |
| Communication Disruption Analysis of UAV-Assisted Terahertz-Enabled 6G Base Station in Internet of Flying Things.....                            | 426 |
| <i>Ismail Ersin, Mustafa A. Akkas, Orhan Dagdeviren</i>                                                                                          |     |
| Analysis of Traffic Flow Profiles in a Transportation Network using Graph Theory Methods.....                                                    | 434 |
| <i>Akin Çaglar, Furkan Öztemiz</i>                                                                                                               |     |
| Transaction Types in Cryptocurrencies .....                                                                                                      | 440 |
| <i>Taha Uysal, Hüseyin Ünözkan</i>                                                                                                               |     |
| Performance Improvement in Blood Cell Segmentation with Deep Learning-Based Image Fusion Approach .....                                          | 449 |
| <i>Fatma T. Dogu, Hulya Dogan, Ramazan O. Dogan, F. Sena Sezen</i>                                                                               |     |
| A Dimensional Approach for Multivariate Discrete Time Survival Data .....                                                                        | 454 |
| <i>Fatma Özbay</i>                                                                                                                               |     |
| Towards Accurate Alzheimer’s Disease Diagnosis: Integrating Focused Linear Attention in Deep Learning Frameworks.....                            | 458 |
| <i>Francis Sam, Zhiguang Qin, Daniel Addo, Joseph R. Arhin, Williams Ayivi, Sarpong Kwabena, Gladys W. Muoka</i>                                 |     |
| Assessment of an Optimal Multilayer Perceptron Model in Estimation of Stock’s Price Rates; A Sample from the Turkish Stock Exchange BIST .....   | 463 |
| <i>Mustafa O. Duman, Mehmet E. Tagluk</i>                                                                                                        |     |
| Performance Analysis of Attention Mechanisms for Melanoma Cancer Detection.....                                                                  | 468 |
| <i>Gürkan Dogan</i>                                                                                                                              |     |
| Estimation of Solar Systems Energy Generation Based on Machine Learning.....                                                                     | 474 |
| <i>Mohammed Salemdieb, Mohammed Wadi</i>                                                                                                         |     |
| Enhancing Performance in Mobile Ad-Hoc Networks via Expanded View of Network Topology .....                                                      | 480 |
| <i>Kerem M. Zehre, Mehmet F. Dalay, Merve Koca, Soude F. Alam, Mukerrem Yildiz</i>                                                               |     |
| Deep CNN Model for Classifying Neurological Diseases using MRI Brain Images .....                                                                | 485 |
| <i>Muhammet K. Daher, Abdullah Elewi</i>                                                                                                         |     |
| Using Clique to Identify Access Points with High-Density Coverage in Different Locations .....                                                   | 492 |
| <i>Furkan Öztemiz</i>                                                                                                                            |     |

|                                                                                                                                                       |     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Investigating Effect of Optimization Algorithms on Chaos Based Image Encryption .....                                                                 | 497 |
| <i>Cemile Ince, Kenan Ince</i>                                                                                                                        |     |
| Inpainting Technique for Removing Vehicle Logos using Haar-Like and Fast Marching Methods.....                                                        | 502 |
| <i>Meryem Durmus, Burhan Ergen, Ömer Durmus, Ferhat Atasoy</i>                                                                                        |     |
| Impact of Outside Temperature on Driving Range and Energy Consumption using Real-Time Big<br>Data for Electric Buses.....                             | 507 |
| <i>Yunus E. Ekici, Teoman Karadag, Ahmet A. Aydin, Ozan Akdag</i>                                                                                     |     |
| IoT with LoRa Architecture for Indoor Air Quality Monitoring System.....                                                                              | 515 |
| <i>Mohammed Jouda, Mohammed Wadi</i>                                                                                                                  |     |
| Radar Sistemlerinde Çoklu Sahte Hedef Karıştırma Tekniklerine Karşı CFAR Algoritmalarının<br>Performans Değerlendirmesi .....                         | 521 |
| <i>Ahmet Uslu, Gülsah Y. Altintas, Baran Kirdar</i>                                                                                                   |     |
| Design and Implementation of a Hybrid Genetic Algorithm for Cluster Head Selection in<br>Heterogeneous Wireless Sensor Networks .....                 | 526 |
| <i>Ege E. Uslu, Zuleyha A. Dagdeviren, Orhan Dagdeviren</i>                                                                                           |     |
| Simultaneous EEG and fMRI Data: Investigating Principal Component Analysis for Predicting<br>Brain Activation During Rest and Sleep States .....      | 534 |
| <i>Adnan Elahi, Sara Marceglia</i>                                                                                                                    |     |
| State of Health Estimation of Lithium Titanate Oxide Batteries Through Data-Driven Techniques<br>and Machine Learning.....                            | 539 |
| <i>Nisanur Yildiran, Ismail C. Dikmen, Teoman Karadag</i>                                                                                             |     |
| A New Approach to Spyware Classification using a 1D-Gaussian Filter on Network Packets.....                                                           | 547 |
| <i>Irfan Kilic, Orhan Yaman</i>                                                                                                                       |     |
| Liquid Neural Networks - Classification and Time Series Forecasting Use Case .....                                                                    | 552 |
| <i>Mehmet Kavakli, Ferhat Uçar</i>                                                                                                                    |     |
| Classification of Cattle Behavior Leveraging Accelerometer Data and Machine Learning .....                                                            | 559 |
| <i>Ahmet Pütün, Derya Yilmaz</i>                                                                                                                      |     |
| A Comparative Study of Artificial Intelligence and eXplainable AI Techniques for Pulmonary<br>Disease Detection and Its Severity Classification ..... | 565 |
| <i>Laxmi Pawar, Suhas Patil, Sunita Dhotre, Sheetal Sonawane</i>                                                                                      |     |
| Döngüde Etik: Yapay Zekâ Yas,am Döngüsü Yönetişimine Kapsamlı Ve Multidisipliner<br>Metodolojik Yaklaşım.....                                         | 572 |
| <i>Ilayda Süer, Zümrüt Müftüoglu</i>                                                                                                                  |     |
| Comparative Analysis of Transformer Based Vector Models for Hate Speech in Turkish Tweets .....                                                       | 585 |
| <i>Emine Gümüş, Rabia Sariyar, Furkan Göz</i>                                                                                                         |     |
| Comparison of Deep Learning and Machine Learning Methods for Fingerprint Verification and<br>Forgery Detection.....                                   | 590 |
| <i>Merve Genel, Özgü Can, Aybars Ugur</i>                                                                                                             |     |
| Comparative Assessment of Electromagnetic Pollution from Base Station with Instant and<br>Continuous Measurements .....                               | 598 |
| <i>Teoman Karadag, Mehmet S. Mamis, Nisanur Yildiran</i>                                                                                              |     |

|                                                                                                                                 |     |
|---------------------------------------------------------------------------------------------------------------------------------|-----|
| Advanced Driving Cycle Generation using XGBoost: A Case Study in Iğdır, Türkiye .....                                           | 607 |
| <i>Fesih Keskin</i>                                                                                                             |     |
| Improving Attack Detection in IoV Systems using GA-Based Hyperparameter Optimization .....                                      | 613 |
| <i>Muhammed F. Gül, Halit Bakir</i>                                                                                             |     |
| Design and Development of Solar Powered Smart Fish Tank for Hatchling Cultivation with IoT-<br>Based Monitoring .....           | 618 |
| <i>Lloyd O. S. Perez, Roldan G. David, Alexander T. Demetillo, Alfred D. B. Balamad, Jeffrey T. Dellosa, Lovely M. Dagsa</i>    |     |
| Anomaly Detection on Servers using Log Analysis .....                                                                           | 624 |
| <i>Mert I. Saygili, Saltuk B. Özelgöl, Ilkay S. Öztürk, Kevser Ö. Karaca, A. Orkun Gedik, M. Ali Akcayol</i>                    |     |
| Skin Cancer Detection Based on YOLOv8 Through a Mobile Application .....                                                        | 629 |
| <i>Numan Deniz, Canan Tastimur</i>                                                                                              |     |
| Artificial Intelligence Assisted Crater Detection for Lunar Surface Landing and Terrain Relative<br>Navigation .....            | 634 |
| <i>Sena Tasgin, Deniz B. Küçük, Muammer Türkoglu</i>                                                                            |     |
| News Classification with State-Of-The-Art Deep Learning Methods .....                                                           | 638 |
| <i>Serkan Ozdemir</i>                                                                                                           |     |
| Reinforcement Learning-Driven Latency Minimization for Transportation and Traffic Engineering<br>in Logistic SDN Networks ..... | 643 |
| <i>Refik Tangi, Furkan Ayaz, Evrim Guler, Murat Karakus</i>                                                                     |     |
| Calculating Airport and Airspace Capacities by using Complex Network Arguments .....                                            | 649 |
| <i>Sertan Pekel, Zuleyha A. Dagdeviren, Muge Sayit</i>                                                                          |     |
| Comparison of Activation Functions in the KarciFANN Method .....                                                                | 657 |
| <i>Meral Karakurt, Hülya Saygili, Ali Karci</i>                                                                                 |     |
| Opcode and N-Gram Based Malware Classification .....                                                                            | 663 |
| <i>Ömer Özcan, Muhammed Karaaltun, Mehmet Hacibeyoglu</i>                                                                       |     |
| High Performance Automatic ROI Extraction from Hand Images with Convolutional Neural<br>Networks .....                          | 671 |
| <i>Betül K. Sünnetci, Özkan Bingöl, Eyüp Gedikli, Murat Ekinci</i>                                                              |     |
| Optimization Strategies in Deep Learning Method ADO for Fake News Detection on Social Media .....                               | 677 |
| <i>T. S. Steni Mol, S. Gokila</i>                                                                                               |     |
| Maximizing XBee Range: Enhancing Communication using Co-Planar Patch Antennas for Stable<br>Ground Connectivity .....           | 683 |
| <i>M. Duman, E. Ertan, S. A. Koç</i>                                                                                            |     |
| Electric Vehicle Stock Price Prediction using LSTM, Bi-LSTM and GRU .....                                                       | 689 |
| <i>Serpil Özer, Ümmühan N. Erol</i>                                                                                             |     |
| Optimization-Based Hyperparameter Selection in Deep Learning Methods for Detection of Lung<br>Diseases .....                    | 696 |
| <i>Ahmet Ciran, Serdar Ertem, Erdal Özbay</i>                                                                                   |     |

|                                                                                                                                                |     |
|------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| A Comprehensive Survey on Automatic Detection of Fake News using Natural Language Processing: Challenges and Limitations .....                 | 704 |
| <i>Alhadi O. Saleh, Kürsat M. Karaoglan, Muhammet Çakmak</i>                                                                                   |     |
| A New Treatment Application Approach for Immune Plasma Algorithm .....                                                                         | 711 |
| <i>Tevfik Erkin, Selcuk Aslan</i>                                                                                                              |     |
| Edge Information Assisted Decoder for Business Process Anomaly Detection .....                                                                 | 715 |
| <i>Teoman B. Ayaz, Alper Özcan, Akhan Akbulut</i>                                                                                              |     |
| Developing Question-Answering Models in Low-Resource Languages: A Case Study on Turkish Medical Texts using Transformer-Based Approaches ..... | 720 |
| <i>Mert Incidelen, Murat Aydoğan</i>                                                                                                           |     |
| Image Generation Performance Analysis: A Comparative Study of GAN Models on MNIST Dataset .....                                                | 724 |
| <i>Nisa Sari, Abdullah Elewi, Mehmet Aci</i>                                                                                                   |     |
| Impact of Transformer-Based Models in NLP: An In-Depth Study on BERT and GPT .....                                                             | 731 |
| <i>Mustafa Salici, Üyesi E. Ölçer</i>                                                                                                          |     |
| Evaluation of Voice Recognition Platforms and Methods for Edge AI Devices.....                                                                 | 737 |
| <i>Yunus Koç, Ahmet A. Tarçin, Dogukan Köse</i>                                                                                                |     |
| Chaos Based Pixel Scrambling Algorithm Based on Corner Traversal .....                                                                         | 743 |
| <i>Cemile Ince, Kenan Ince, Davut Hanbay</i>                                                                                                   |     |
| Boosting Based IDS System for Local Network Intrusions .....                                                                                   | 747 |
| <i>Kursad M. Canpolat, Ilhan F. Kilincer</i>                                                                                                   |     |
| Performance Analysis of U-Net and UNETR for 2D BraTS Within Consumer-Grade Hardware Limits .....                                               | 753 |
| <i>Gourab Datta, Mohammad J.-U. K. Chowdhury, S. A. Naimul Hoque, M. Aminul Islam</i>                                                          |     |
| WSO-Optimized PID Controller Design for SEPIC Converter Voltage Stability .....                                                                | 760 |
| <i>Furkan M. Kirikci, Ömür Akyazi, Hakan Kahveci</i>                                                                                           |     |
| Intrusion Detection with Machine Learning and Deep Learning Methods in IoT Healthcare.....                                                     | 766 |
| <i>Sevban Duran, Hazal N. M. Akpınar, Rana I. Eser, Seyma Dogru, Ozgur K. Sahingoz</i>                                                         |     |
| Feedback Linearization Based Passive Fault Tolerant Control of a Quadrotor .....                                                               | 773 |
| <i>Ahmet Ermeýdan, Aziz Kaba</i>                                                                                                               |     |
| Simultaneous Optimization of the Number and Distribution of Friction Dampers for Seismically Excited Buildings: An AI Approach .....           | 778 |
| <i>Mert C. Kurucu, Ercan Atam, Müjde Güzelkaya, Ibrahim Eksin</i>                                                                              |     |
| A Preliminary Study for Radar-Based Fall Detection using Power Spectral Density Features Obtained by Welch Method .....                        | 784 |
| <i>Ibrahim Seflek</i>                                                                                                                          |     |
| Analysis of Electromyography Signals with Recurrence Plots in Detection of Knee Disorders.....                                                 | 789 |
| <i>Asuman Küçük, Derya Yılmaz</i>                                                                                                              |     |
| Predicting Photovoltaic Solar Energy Generation using Capsule Network Architecture .....                                                       | 795 |
| <i>Abulqasem Abdo, Emre Dandil</i>                                                                                                             |     |

|                                                                                                                                         |     |
|-----------------------------------------------------------------------------------------------------------------------------------------|-----|
| Rapid Development of Mobile Service Robot in Public Space for Robotics Challenge Experiments .....                                      | 801 |
| <i>Tomohiro Umetani, Shun Ujio, Hiro Matsumoto, Gaku Mochizuki</i>                                                                      |     |
| A Real-Time Valve Counting System Based on YOLOv8 .....                                                                                 | 805 |
| <i>Müzeyyen Çelik, Ferhat Akar, Cüneyt Bayılmış, Devrim Akgün</i>                                                                       |     |
| Handwriting Analysis for Alzheimer's Diagnosis: Feature Enrichment and Machine Learning Classification .....                            | 810 |
| <i>Cansu A. Anacur, Asuman G. Yilmaz, Murat Aykut</i>                                                                                   |     |
| Classification of Vegetable Quality with InceptionV3, Xception and Combination of These Models .....                                    | 815 |
| <i>Fatma Baydar, Halit Bakır, Metin Zontul</i>                                                                                          |     |
| Wi-Fi Network Intrusion Detection: Enhanced with Feature Extraction and Machine Learning Algorithms .....                               | 822 |
| <i>Sevval Solpan, Hakan Gündüz, Kerem Küçük</i>                                                                                         |     |
| Short-Term Wind Speed Estimation with Deep Learning Method: Bingöl Example .....                                                        | 829 |
| <i>Kader Ozan, Dursun Öztürk</i>                                                                                                        |     |
| Object Detection-Based Indoor Earthquake Risk Analysis for NAO Robot .....                                                              | 837 |
| <i>Dogan Tatar, Muhammet E. Kahraman, Selma Y. Kayaarma</i>                                                                             |     |
| Detection of DoS Attacks in WSNs by using Machine Learning Models .....                                                                 | 844 |
| <i>Hazal N. M. Akpınar, Sevban Duran, Rana I. Eser, Seyma Dogru</i>                                                                     |     |
| Classification of Terahertz Images via Caustic Lens and Transfer Learning .....                                                         | 852 |
| <i>Dogan T. Arik, Asaf B. Sahin, Özgün Ersoy</i>                                                                                        |     |
| Biometric Fraud Detection System .....                                                                                                  | 856 |
| <i>Ahmad Abdeen, Mahmoud Mohanna, Yusuf Mansur, Elena B. Sonmez</i>                                                                     |     |
| A Robust Hybrid Control Model Implementation for Autonomous Vehicles .....                                                              | 864 |
| <i>Mustafa H. Al-Jumaili, Yasa E. Özok, Abdullahi A. Ibrahim, Oguz Bayat</i>                                                            |     |
| A Comparative Study of Microstrip Antennas with Two Distinct Feeding Techniques with Different Substrates for S-Band Applications ..... | 869 |
| <i>Jeneson C. Sarnillo, Re-Ann C. O. Calimpusan, Jeffrey T. Dellosa, E. Erojo Joshua</i>                                                |     |
| Smart Cyber Defense: Machine Learning Powered Intrusion Detection in 802.11 Networks .....                                              | 875 |
| <i>Mirac Kaya, Hasan K. Kucukates, Murat Demez, Ilhan F. Kilincer</i>                                                                   |     |
| Mapping of a Specific Area with an Autonomous Vehicle .....                                                                             | 882 |
| <i>Enes Besinci, Mehmet B. Tabakcioglu</i>                                                                                              |     |
| Applications of Feature Selection for Detecting Energy Discharge and Thermal Faults in Transformers using DGA Data .....                | 887 |
| <i>Mohammad H. Hashemi</i>                                                                                                              |     |
| Enhancing Early Diagnosis of Alzheimer's Disease in MRI Images using Deep CNN Model .....                                               | 892 |
| <i>Muhammet K. Daher, Abdullah Elewi</i>                                                                                                |     |
| Brain Tumor Detection from Brain MRI Images with Deep Learning Methods .....                                                            | 898 |
| <i>Sükrü Aykat</i>                                                                                                                      |     |

|                                                                                                                                         |     |
|-----------------------------------------------------------------------------------------------------------------------------------------|-----|
| Prairie Dog Optimization-Based Tilt-Integral-Derivative Controller for Frequency Regulation of Power System.....                        | 904 |
| <i>Serdar Ekinci, Davut Izci, Laith Abualigah, Raymond Ghandour, Mohammad Salman</i>                                                    |     |
| A Novel 1D Polynomial Chirp Based Chaotic Map and a Simple Application to PRNG .....                                                    | 910 |
| <i>Sabri Altunkaya</i>                                                                                                                  |     |
| Improving Salary Offer Processes with Classification Based Machine Learning Models .....                                                | 915 |
| <i>Rukiye Kaya, Mehtap Saatçi, Mehmet G. Bakal</i>                                                                                      |     |
| A Novel Water Distribution and Performance Monitoring System using AI.....                                                              | 922 |
| <i>S. K. S. Raja, S. Usha Kiruthika, C. J. Raman</i>                                                                                    |     |
| Processing and Classification of Covid-19 Audio Data with Optimization-Based Learning Techniques.....                                   | 929 |
| <i>Yüstra Dagilma, Erdal Özbay</i>                                                                                                      |     |
| OptiMap: Heuristic Clustering Algorithm for Minimum Cost Paths.....                                                                     | 935 |
| <i>Hüseyin E. Okutan, Muhammet Baykara</i>                                                                                              |     |
| Using Quantum Resistant Variants of NIST IR 8454 Lightweight Encryption Algorithms in Image Encryption .....                            | 941 |
| <i>Muhammed S. Kaya, Kenan Ince</i>                                                                                                     |     |
| A Novel Federated Learning Framework for System Identification.....                                                                     | 948 |
| <i>Ertugrul Keçeci, Mijde Güzelkaya, Tufan Kumbasar</i>                                                                                 |     |
| Triplet Attention-Enhanced UNet Architectures for Advanced Skin Lesion Segmentation .....                                               | 954 |
| <i>Zaid Al-Huda, Mugahed A. Al-Antari, Riyadh N. A. Algburi, Omar Al-Maqtari, Taha M. Rajeh, Ghufraan A. Khan</i>                       |     |
| Decentralized Multimedia Caching and Retrieval in Vehicular Networks .....                                                              | 962 |
| <i>Hussam Alkashto, Abdullah Elewi</i>                                                                                                  |     |
| Unet3D Based Next Frame Prediction .....                                                                                                | 968 |
| <i>Enver Akbacak</i>                                                                                                                    |     |
| Psychological Assistant: Assessing the Emotional State of a Patient using Triple Video Analysis Method .....                            | 972 |
| <i>Mustafa Alkan, Wisam Elmasry</i>                                                                                                     |     |
| Single-Stage Deep Learning in Aviation: YOLOv5 for Satellite-Based Aircraft Detection .....                                             | 980 |
| <i>Melis Duhter, Klaudia Schultheiss, Hana M. Marek, Monika L. Starha, Hilal Kuzu</i>                                                   |     |
| An Overview of Deepfake Video Detection using Remote Photoplethysmography .....                                                         | 986 |
| <i>Berkay Yilmaz, Saffet Vatansever</i>                                                                                                 |     |
| A Novel CAD Framework with Visual and Textual Interpretability: Multimodal Insights for Predicting Respiratory Diseases .....           | 994 |
| <i>Raza Mukhlis, Saied Salem, Hyunwook Kwon, Jamil Hussain, Ahmet A. Aydin, Mugahed A. Al-Antari</i>                                    |     |
| Comparison of Extractive and Abstractive Approaches in Automatic Text Summarization: An Evaluation on BBC-News and PubMed Datasets..... | 999 |
| <i>Said Yunus, Cengiz Hark, Fatih Okumus</i>                                                                                            |     |

|                                                                                                                                                               |      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| A Zero-Sum Game of Age of Information Over a Finite Horizon Between Sensor and Adversary .....                                                                | 1006 |
| <i>Aynur C. Aka, Leonardo Badia</i>                                                                                                                           |      |
| An Approach to Improve Object Detection with You Only Look Once (YOLO) and Artificial Neural Networks.....                                                    | 1011 |
| <i>Kursad Ucar</i>                                                                                                                                            |      |
| Sentiment Analysis Based on Text with Universal Sentence Encoder and CNN-LSTM Models.....                                                                     | 1018 |
| <i>Semih O. Saka, Zafer Cömert</i>                                                                                                                            |      |
| An Effective Approach Based on the Malatya Centrality Algorithm for Determining the Maximum Independent Set and Minimum Vertex Cover in Molecular Graphs..... | 1022 |
| <i>Selman Yakut</i>                                                                                                                                           |      |
| Control and Monitoring Systems for Hospital Medical Gases .....                                                                                               | 1028 |
| <i>Yavuz B. Koca</i>                                                                                                                                          |      |
| Comparative Analysis of Patch Antenna Design for RF Energy Harvesting.....                                                                                    | 1032 |
| <i>Duke A. A. Dumogho, Joshua E. Erojo, Re-Ann C. O. Calimpusan, Jeffrey T. Dellosa</i>                                                                       |      |
| QR Code-Based Authentication in IoT Mesh Network .....                                                                                                        | 1038 |
| <i>Özlem Seker, Cemal Uyüklü, Gökhan Dalkiliç</i>                                                                                                             |      |
| Ensemble Learning in Li-Ion Battery Management Systems: Focus on Voting Regression for Capacity Estimation.....                                               | 1046 |
| <i>Burçak Asal, Saadin Oyucu, Ahmet Aksoz</i>                                                                                                                 |      |
| Predicting the Rehospitalization Times of Diabetic Patients using Machine Learning Models .....                                                               | 1051 |
| <i>Osman Ural</i>                                                                                                                                             |      |
| Customer Purchase Intent Prediction using Feature Aggregation on E-Commerce Clickstream Data.....                                                             | 1060 |
| <i>A. Aylin Tokuç, Tamer Dag</i>                                                                                                                              |      |
| Academic Use of ChatGPT: Examining the Trends According to Disciplines.....                                                                                   | 1065 |
| <i>Abdullah Bircan, Dilek Mandal, İrfan Kösesoy</i>                                                                                                           |      |
| Location Detection of an Object Non Line of Sight with Audio Signal .....                                                                                     | 1073 |
| <i>Nevzat Olgun, Mücahit Çalışan</i>                                                                                                                          |      |
| Internet of Things and Arduino-Based Carbon Monoxide Detection System .....                                                                                   | 1077 |
| <i>Ersin Bulak, Recep Özdağ</i>                                                                                                                               |      |
| Transformative Approaches to Customer Sentiment Analysis and Customer Feedback Scoring in CRM Platforms.....                                                  | 1083 |
| <i>Rabia Cevik, Ahmet E. Celik, Akhan Akbulut</i>                                                                                                             |      |
| Factors Influencing Student Academic Performance and Career Choices.....                                                                                      | 1089 |
| <i>Arbër H. Hoti, Xhemal Zenuni</i>                                                                                                                           |      |
| Comparison of YOLOv8 Models for Detecting Lemons from Tree.....                                                                                               | 1097 |
| <i>Sibel Kaplan, Zeki Yetgin, Arif Hajiyeve</i>                                                                                                               |      |
| Sentiment Analysis using Various Machine Learning Techniques on Depression Review Data.....                                                                   | 1103 |
| <i>Muhammed M. Alnaddaf, Muhammet S. Basarslan</i>                                                                                                            |      |
| Deep Learning Method for Load Forecast in Smart Solar System Based Long Short-Term Memory .....                                                               | 1108 |
| <i>Khanh N. Le Kim, Tien N. Quoc, Phuong N. Thanh</i>                                                                                                         |      |

|                                                                                                                                                                                                                                       |      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| On the Impact of Instance Normalization in CNN-Based SOC Estimation for Lithium-Ion Battery<br>Energy Storage .....                                                                                                                   | 1113 |
| <i>Halil Çimen</i>                                                                                                                                                                                                                    |      |
| A Study on using the Golden Ratio in Unique Key Generation .....                                                                                                                                                                      | 1119 |
| <i>Ahmet Topal, Fatih Okumus</i>                                                                                                                                                                                                      |      |
| Nail Type Recommendation using Deep Learning Models .....                                                                                                                                                                             | 1124 |
| <i>Yagmur Yarimbiyik, Hamit Erdem</i>                                                                                                                                                                                                 |      |
| Examination of Accuracy of Interior Positioning .....                                                                                                                                                                                 | 1128 |
| <i>Nezir Dogan, Önder H. Bettemir</i>                                                                                                                                                                                                 |      |
| A Comparative Study of Ensemble Learning Methods for Turkish Text Categorization .....                                                                                                                                                | 1134 |
| <i>Ezgi Zorarpaci</i>                                                                                                                                                                                                                 |      |
| Effects of Some Deep Learning Models with Power Law Transformation on Brain Tumor<br>Classification .....                                                                                                                             | 1140 |
| <i>Çetin Erçelik, Kazim Hanbay</i>                                                                                                                                                                                                    |      |
| Enhancing Aquarium Fish Classification Through YOLO: A Deep Learning Approach .....                                                                                                                                                   | 1147 |
| <i>Murat Isik, Mehmet A. Yalcinkaya</i>                                                                                                                                                                                               |      |
| A Study Evaluating the Performance of Nonlinear Nomoto Models in Predicting the Maneuvering<br>of Car Carrier.....                                                                                                                    | 1151 |
| <i>Elis Atasayan, Evgeni Milanov, Ahmet D. Alkan</i>                                                                                                                                                                                  |      |
| Automated Categorization of Turkish E-Commerce Product Reviews using BERTurk.....                                                                                                                                                     | 1155 |
| <i>Volkan Altintas, Murat Kilinc</i>                                                                                                                                                                                                  |      |
| Application of the Extended Cubic Bézier Interpolation Method to the Boundary Value Problems.....                                                                                                                                     | 1161 |
| <i>Vahide Bulut, Ozlem Kirci, Ali Caliskan</i>                                                                                                                                                                                        |      |
| International Insights on AI Risk: Comparative Analysis of International Organizations.....                                                                                                                                           | 1166 |
| <i>Seda I. A. Ercan, Osman Akin</i>                                                                                                                                                                                                   |      |
| Noise Reduced SAR Ship Database .....                                                                                                                                                                                                 | 1174 |
| <i>Kazim Hanbay, Hüseyin Üzen, Taha B. Özdemir, Çetin Erçelik</i>                                                                                                                                                                     |      |
| Comparison of Out-Of-Plane Displacement Prediction of Infill Masonries using Artificial<br>Intelligence Techniques .....                                                                                                              | 1180 |
| <i>Onur Onat</i>                                                                                                                                                                                                                      |      |
| A Fuzzy AHP-Based Methodology for IS/IT Project Portfolio Prioritization: A PMO Case Study .....                                                                                                                                      | 1185 |
| <i>Anass Zaidouni, Mohammed A. J. Idrissi, Adil Bellabdaoui</i>                                                                                                                                                                       |      |
| AI_r: Transforming Air Quality Monitoring Through Cost-Effective AI Solutions .....                                                                                                                                                   | 1196 |
| <i>Methembe T. Tshuma, Ryan McKenzie, Thuso Mathaha, Lotta Mayana, Antonio Cervello,<br/>Vongani Chabalala, Isaiah Chiraira, Nkosiphendule Njara, Iqra Atif, Ling Cheng, Jude Kong,<br/>Ahsan Mahboob, Bevan Smith, Bruce Mellado</i> |      |
| A Novel Centrality-Driven Clustering Approach for Information Retrieval and Question Answering .....                                                                                                                                  | 1204 |
| <i>Zahir Edress, Yasin Ortacki</i>                                                                                                                                                                                                    |      |
| Categorization of Turkish Text Documents using Extreme Learning Machine.....                                                                                                                                                          | 1215 |
| <i>Rasim Çekik</i>                                                                                                                                                                                                                    |      |

|                                                                                                                                              |      |
|----------------------------------------------------------------------------------------------------------------------------------------------|------|
| Crack Detection with Conditional Diffusion Model.....                                                                                        | 1222 |
| <i>Onur Bostancioglu, Levent Karacan</i>                                                                                                     |      |
| A Color Moments-Based Method for Detection of Honey Bee Diseases.....                                                                        | 1226 |
| <i>Irfan Kilic, Orhan Yaman</i>                                                                                                              |      |
| Memristive Synapses as Building Blocks of Neuromorphic Artificial Intelligence (AI) Hardware.....                                            | 1230 |
| <i>Fatih Gül</i>                                                                                                                             |      |
| Identifying Social Connections: An Empirically-Driven Evaluation of Community Detection<br>Methods on Twitter.....                           | 1235 |
| <i>Ceren B. Yilmaz, Zuleyha A. Dagdeviren, Murat O. Unalir</i>                                                                               |      |
| Evaluation of the Performance of Transfer Learning Techniques in Classifying Fish Species .....                                              | 1243 |
| <i>Damla Ataç, Durmus Ö. Sahin</i>                                                                                                           |      |
| Machine Learning Approaches for Predicting Electric Vehicle Charging Demand and Energy<br>Consumption .....                                  | 1249 |
| <i>Taha Etem</i>                                                                                                                             |      |
| Utilizing Hybrid Encryption Methods to Ensure the Security of Financial Transactions.....                                                    | 1256 |
| <i>Erman Özer, Hasan Aydos</i>                                                                                                               |      |
| Towards Development of Memory-Efficient Intrusion Detection System Against RPL Attacks .....                                                 | 1260 |
| <i>Selim Yilmaz</i>                                                                                                                          |      |
| Secure, Robust and Optimized Algorithm: Towards Enhancing Digital Image Watermarking .....                                                   | 1266 |
| <i>Ceyda Uluturk, Fidan Akdeniz, Melike Varol, Wisam Elmasry</i>                                                                             |      |
| PID and PID-F Controller Design Based on Particle Swarm Optimization for Automatic Voltage<br>Regulator System .....                         | 1274 |
| <i>Emre H. Dursun</i>                                                                                                                        |      |
| Development and Evaluation of an Advanced Battery Management System (BMS) for Lithium-Ion<br>Batteries in Renewable Energy Applications..... | 1280 |
| <i>Markdhie N. Yubac, Jeffry P. Cabalan, Ydron P. C. Amarga, Ronieto N. Mendoza, Jeffrey T.<br/>Delloso, Re-Ann C. O. Calimpusan</i>         |      |
| Illuminating Networks: Enhancing Visible Light Communication with Physical-Layer Network<br>Coding (PNC-VLC Scheme).....                     | 1287 |
| <i>Abdellah Tahenni, Fatiha Merazka</i>                                                                                                      |      |
| Comparative Analysis of ANN, SVR, and AdaBoost Models for V2V Path Loss Prediction in<br>Urban and Suburban Environments.....                | 1293 |
| <i>Nugman Sagir, Zeynep H. Tugcu</i>                                                                                                         |      |
| Semantic Interoperability and Reusability in IoT: A Systematic Mapping Study .....                                                           | 1298 |
| <i>Amal Alsaeh, Arda Sezen</i>                                                                                                               |      |
| Detection of Layer 2 Attacks Based on t-SNE Algorithm.....                                                                                   | 1305 |
| <i>Tugba Dolek, Orhan Yaman, Ilhan F. Kilincer</i>                                                                                           |      |
| Benchmarking Various 1D Chaotic Maps for Lightweight Pseudo-Random Number Generation.....                                                    | 1311 |
| <i>Muhammed S. Kaya, Kenan Ince</i>                                                                                                          |      |

## Author Index