

# **2023 4th International Informatics and Software Engineering Conference (IISEC 2023)**

**Ankara, Turkey  
21-22 December 2023**



**IEEE Catalog Number: CFP23U73POD  
ISBN: 979-8-3503-1804-3**

**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:	CFP23U73-POD
ISBN (Print-On-Demand):	979-8-3503-1804-3
ISBN (Online):	979-8-3503-1803-6

**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

Reconfigurable Low Weight Hybrid PUF Design Against Side Channel Attacks.....	1
<i>Bhagyalakshmi Narayanapuram, Jeebananda Panda</i>	
Enhancing Manufacturing Efficiency with Computer Vision and Doosan Robotics: An Overview of Real-Time Object Detection and Automated Decision-Making .....	6
<i>Ameni Chaabani, Raef Cherif, Yacine Yaddaden</i>	
Autonomous Multi-UAV System for Efficient Scanning of Large Concrete Structures .....	11
<i>Mohamed Razi Ghedamsi, Raef Cherif, Yacine Yaddaden</i>	
Improving Measurement Accuracy of Acoustic Intensity in Vibrating Machines Using a Doosan Robot.....	17
<i>Oussema Triki, Raef Cherif, Yacine Yaddaden</i>	
Design and Feasibility Study of Assistive Robotic Arm for Orthopedically Handicapped Individuals .....	23
<i>Ali Ihsan Sari, Berkay Dervisoglu, Atajan Rovshenov</i>	
Man-hour Prediction for Complex Industrial Products .....	29
<i>Ahmet Emin Unal, Halit Boyar, Burcu Kuleli Pak, Mehmet Cem Yildiz, Ali Erman Erten, Vehbi Cagri Gungor</i>	
Visualizing the Path of a Photo Taker from Image Metadata .....	35
<i>Rasty Shakhawan Majid, Cihan Varol, Asaf Varol, Ahad Nasab</i>	
Assessing the Explainability of Lgbm Model for Effort Estimation on ISBSG Dataset .....	42
<i>Merve Özdes Demir, Bahar Gezici, Ayca Kolukisa Tarhan</i>	
Sinhala Sign Language Learning System for Hearing Impaired Community .....	48
<i>Idushan K. A. S, Dilshan P. G. T, Jayasundera P. S, Madhushan K. L. B, Jenny Krishara, Dinuka Wijendra</i>	
Helpchain: A Blockchain Based Disaster Management System.....	54
<i>Berke Parildar, Doruk Sayin, Furkan Zeki Türkzeybek, Onur Küçüköz, Yusuf Murat Erten</i>	
Development of a Smart Edge Device for Home Security .....	59
<i>Chen Shyan Lee, Hou Kit Mun</i>	
Recommender Systems for NFT Purchasing.....	64
<i>Durmus Aydogdu, Nizamettin Aydin</i>	
AI-Driven Drought Management System: A Turkish Case Study .....	69
<i>Milad Sabamehr, Cansu Cigdem Ekin</i>	
Generative Pre-Trained Transformer (GPT) Models for Irony Detection and Classification.....	75
<i>Mustafa Ulvi Aytakin, O. Ayhan Erdem</i>	
The FFCP Model for Predicting Click-Through Rate .....	83
<i>Ergun Bici</i>	
Smart Ornamental Fish Caring System for Aquatic Industry .....	88
<i>D. T. W. S. Perera, M. P. Abeysekara, R. H. T. Nethmini, Udara Srimath S. Samaratunge Arachchillage, C. K. Jayawardana, Thilini Jayalath</i>	

Analyzing Customer Churn: A Comparative Study of Machine Learning Models on Pay-TV Subscribers in Turkey .....	94
<i>Tugce Aydin Hatas, Emir Obali, Aysenur Yildiz, Sibel Kirmizigül Caliskan, Veysel Karani Yilmaz, Erkan Kara, Yasemin Kurtcu Mese, Ebru Öz, Tuna Cakar</i>	
Detecting Novel Behavior and Process Enhancement with Multimodal Process Mining .....	100
<i>Abdurrahman Telli, Tugba Gurgen Erdogan, Ayca Kolukisa</i>	
Facial Skincare Product Suggestion with Product Popularity and Post Recommendation Care .....	106
<i>H. M. W. T. C. B. Samarakoon, A. U Ovitigala, G. A. T. T. Wijesinghe, K. M. L. P. Weerasinghe, G. K. B. V. Karunathilake, Ishara Weerathunga</i>	
RailTechX: Advancing Railway Modernization and Expansion Solution .....	112
<i>Tharusha Rajith Singh, Abdullah Rizan, Dulsara Weerasinghe, Uthpala Samarakoon, Piyumika Almeda, Nelum Chathuranga Amarasena</i>	
Fault Detection Model Using Measurement Data in Fiber Optic Internet Lines .....	118
<i>Eray Battal, Gözde Özkan, Kerem Savas, Tuna Cakar</i>	
Vision Transformer Model for Efficient Stroke Detection in Neuroimaging .....	122
<i>Oguzhan Katar, Ozal Yildirim, Yesim Eroglu</i>	
Demand Forecasting for Daily Retail Orders in Fresh Food Market.....	128
<i>Utku Bozdogan, Gülfem Isiklar Alptekin</i>	
Investigation of DQN Algorithm for Driving Control for Smart Cities and Traffic Safety .....	133
<i>Yildiray Yigit, Murat Karabatak, Asaf Varol, Ahad Nasab</i>	
Enhancing Text Summarization: Evaluating Transformer-Based Models and the Role of Large Language Models Like ChatGPT .....	138
<i>Pinar Savci, Bihter Das</i>	
Analyzing Human and ChatGPT Responses: A Comparative Study of Transformer Models in Natural Language Processing .....	142
<i>Tunahan Gökcimen, Bihter Das</i>	
From a Filipino Morphological and Template-Based Stemming:A Text Based Analyzer and Design .....	146
<i>Great Allan M. Ong, Melvin A. Ballera</i>	
Investigating Pre- And Post-Seismic TEC Anomalies Related to Moderate Earthquakes in Türkiye .....	152
<i>Ahmad Muhammad, Fatih Külahci, Asaf Varol, Salim Jibrin Danbatta</i>	
Innovation in Corporate Cyber Security .....	159
<i>Mustafa Senol</i>	
GRAFRAUD: Fraud Detection Using Graph Databases and Neural Networks.....	165
<i>Alperen Sayar, Suayip Arslan, Ajeet Singh Raina, Seyit Ertugrul, Tuna Cakar</i>	
Indonesian Students' Acceptance of Google Classroom .....	169
<i>Nurul Retno Nurwulan, Intan Fauziah</i>	
A Digital Twin Framework for Edge Server Placement in Mobile Edge Computing.....	174
<i>Elif Bozkaya</i>	

Child Protect: Mobile Application Harnessing the A* Search Algorithm for Child Protect Awareness.....	180
<i>Roselia C. Morco, Fredilyn B. Calanda, Rosmina Joy M. Cabauatan, Justine Eric I. Abad, Risty M. Acerado</i>	
Regression Analysis of Age of Empires II DE Match Results with Machine Learning .....	185
<i>Iclal Cetin Tas, Ahmet Anil Mungen</i>	
Verification of the Effect of Hot Springs on Arteriosclerosis Based on the Mathematical Model of Arteriosclerosis Onset III: in Case of Alkaline Springs.....	190
<i>Hiroyuki Kagami, Atsushi Terada, Katsushige Nakashima</i>	
Residual Connections Improve Prediction Performance .....	193
<i>Ergun Bicici, Ali Bugra Kanburoglu, Ramazan Tarik Türksoy</i>	
An Online Shoppers Purchasing Intention Model Based on Ensemble Learning .....	198
<i>Aykut Karakaya, Irem Karakaya, Talya Temizceri</i>	
Oblique Logistic Function for the Rank-Frequency Distribution of Letters.....	202
<i>Can Özbey</i>	
Enhanced Thermal Human Detection with Fast Filtering for UAV Images .....	207
<i>Umut Ozyurt, Begum Cicekdag, Zafer Dogan Budak, Seyda Ertekin</i>	
A Software Tool for Planning LEO Satellite Operations .....	214
<i>Mustafa Yavuz Öztürk, Halit Oguztüzün</i>	
Deep Transfer Learning to Predict Alzheimer Disease Status .....	220
<i>Ahmed Benyahia, Abdessalem Benammar, Imad Eddine Araar</i>	
GOMAD: A Goal Oriented Approach for Modeling and Analyzing Database Deployment .....	225
<i>Abdelkader Ouared, Ahmed Ala Eddine Benali, Ahmed Siabdelhadi</i>	
What More Can LEGO Teach Agile Methods.....	231
<i>Necmettin Ozkan, Seval Bal, Mehmet Sahin Gök</i>	
Finding Optimal Monte-Carlo Run Numbers for Stochastic Data Under Gaussian Distribution.....	237
<i>Ekin Can Erkus, Alper Yıldız, Sevim Acıksöz</i>	
A Comparison of Optimization Methods for Path Finding Problem .....	241
<i>Ekin Can Erkus, Nazim Önder Orhan, Ahmet Bursali</i>	
Analytical Approaches in Customer Relationship Management .....	247
<i>Zeynep Sahin, Kaan Ergin, Mustafa Askim Akata, Büsra Kaya, Ayse Kizilay, Tuna Cakar</i>	
Optimizing Collective Building Management Through a Machine Learning-Based Decision Support System.....	252
<i>Mert Güvencli, Halil Kiran, Erkan Dogan, Hasan Dag, Burcu Özyürüyen, Tuna Cakar</i>	
Forecasting and Analysis of Energy Consumption and Waste Generation in Antalya with SVR.....	256
<i>Suayb Talha Özcelik, Faik Boray Tek, Erdal Sekerci</i>	
Leveraging Transformer-Based Language Models for Enhanced Service Insight in Tourism .....	261
<i>Aleyna Er, Suayb Talha Özcelik, Meltem Turhan Yöndem</i>	
Application of ChatGPT in the Tourism Domain: Potential Structures and Challenges .....	267
<i>Orkun Mehmet Kiliclioglu, Suayb Talha Özcelik, Meltem Turhan Yöndem</i>	

A Study on Slice-Aware Industrial Edge Applications for Next-Generation Private Networks .....	271
<i>Aykut Cubukcu, Adnan Kavak, Özlem Cubukcu, Yagmur Sabucu Sandal, Kerem Küçük</i>	
Applying Sentiment Analysis on Children’s Stories.....	276
<i>Azhar Ahmed Bilal, O. Ayhan Erdem, Sinan Toklu</i>	
Image Denoising with CNN-Based Attention .....	280
<i>Neval Karaca, Serdar Ciftci</i>	
Probability Analysis of Tracking System of a Mobile Robot .....	286
<i>A. K. Ibrahim, A. A. Lobaty, Moustafa Kurdi</i>	
Development of a Genetic Algorithm for Vehicle Routing Problem in Military Logistics Distribution.....	291
<i>Süleyman Kesik, Cevriye Altintas</i>	
Mobile App for Kidney Patients to Provide a Comprehensive Solution to Manage Disease .....	298
<i>C. P. Madubashana, M. R. S. N. Rupasinghe, W. P. S. De Silva, Weerasinghe Lokesha, G. I. Thamaraka, Kelegama Thamali</i>	
AI-Powered Software Testing: The Impact of Large Language Models on Testing Methodologies .....	304
<i>Vahit Bayri, Ece Demirel</i>	

**Author Index**