

# **2023 9th International Conference on Information Technology Trends (ITT 2023)**

**Dubai, United Arab Emirates  
24 – 25 May 2023**



**IEEE Catalog Number: CFP2304J-POD  
ISBN: 979-8-3503-2751-9**

**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:	CFP2304J-POD
ISBN (Print-On-Demand):	979-8-3503-2751-9
ISBN (Online):	979-8-3503-2750-2

**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

Title of Paper	Page No
<b>TRACK 1 Cybersecurity and Networking</b>	
<b>A Formal Language for Actors' Interactions</b> <b>Mo Adda</b>	<b>1</b>
<b>Machine Learning Techniques for Permission-based Malware Detection in Android Applications</b> <b>Inam Ullah Khan, Zahoor Ali Khan, Mir Ahmad, Ali Haider Khan, Fida Muahmmad, Azhar Imran, Dr. Sheeraz Ahmed and Muhammad Khalid Hamid</b>	<b>7</b>
<b>HVAC Attack Detection Using Novel Machine Learning Model</b> <b>Rashed Alnuman, Syed Izhan Hyder and Kevser Akpinar</b>	<b>14</b>
<b>Privacy-Preserving Data Sharing Scheme for E-Health Systems</b> <b>Christopher Bourn, Joseph Heirendt, Kamsiyochukwu Ben-Chiobi, Alexander Haastrup, Ahmed Sherif and Mohamed Elsersty</b>	<b>20</b>
<b>Missing Data Recovery for Downstream Learning in Low-Cost Environmental Sensor Networks</b> <b>Benjamin Agbo, Hussain Al-Aqrabi, Tariq Alsboui, Muhammad Hussain and Richard Hill</b>	<b>26</b>
<b>A Comparative Study of Unauthorized Drone Detection Techniques</b> <b>Charalampos Koulouris, Piromalis Dimitrios, Izzat Al-Darraji, Georgios Tsaramiris and Hatem Tamimi</b>	<b>32</b>
<b>Vaxina: Decentralized Vaccination Tracking System</b> <b>Wesam Almobaideen and Mohammad Mohammed</b>	<b>38</b>
<b>Towards Classifying File Segments in Memory Using Machine- Learning</b> <b>Mohammed Al-Saleh, Akram Alkouz, Abdulsalam Alarabeyyat and Majed Bouchahma</b>	<b>44</b>

Enhancing IoT Intrusion Detection System Performance with the Diversity Measure as a Novel Drift Detection Method	50
<b>Osama A. Mehdi, Ammar Alazab, Savitri Bevinakoppa and Nawfal Ali</b>	
<b>Track-2-Applied Data Science</b>	
An Enhanced Machine Learning Approach to Identify Noise and Detect Relevant Structures for Predictive Modeling	55
<b>Muhammad Fahim Uddin</b>	
A Hybrid Prediction Approach Using Multiple Linear Regression and Decision Trees	61
<b>Mustafa Akpinar, Maryam Azeez and Kayhan Ayar</b>	
Combatting Drug Crime in the United Arab Emirates: A Drone-Based System for Monitoring and Tracking Suspects	67
<b>Omar Alamir and Hesham Allam</b>	
Quality Grading of Beef using Deep Convolutional Neural Network	73
<b>Aarav Sharma, Tanupriya Choudhury, Tanmay Sarkar, Madhusmita Mohanty, Nikunj Bansal and Sachi Nandan Mohanty</b>	
Recommender System For Predicting Students' Academic performance in association with Cognitive state and Affective state using Sentiment Analysis And Association Rule Mining on closed ended questionnaire	79
<b>Amala Jayanthi M and Elizabeth Shanthi I</b>	
Exploring Sustainability in London Airbnb Rentals: A Data-Driven Analysis of Sustainability Keywords Using AI Algorithms	84
<b>Asif Malik, Mohammed Hassouna and Madeleine Togher</b>	
The Influence of AI-Identified Consumer Sentiment Metrics on Crypto-Asset Prices	90
<b>Juan Dempere, Zakea Il-Agure, Hesham Allam, Lakshmana Ramasamy and Shaikha Alqasemi</b>	
Adaptive Methodologies for Tenders as a Thrust for Emerging Startups	96

**Arnav Tiwari, Aniket Mehrotra, Krishnendu Sukumar, Harsh Khatter,  
Ajay Kumar Shrivastava and Divya Prakash Shrivastava**

---

**High Performance Cervical Cancer Detection Using Enhanced  
Gradient Boosting Algorithm** **102**

**Sangeetha Mani, Vijayan Sugumaran, Karthick T and Jagadeesh Puli**

---

**Decoding the Black Box: A Comprehensive Review of Explainable  
Artificial Intelligence** **108**

**Ossama H. Embarak**

---

**Towards Standardized AI-Ready Data: A Proposed Framework for the  
UAE** **114**

**Shaikha Alqassemi, Dr.Zakea Il-Agure and Juan Dempere**

---

**PCOS-WaveConvNet: A Wavelet Convolutional Neural Network for  
Polycystic Ovary Syndrome Detection using Ultrasound images** **117**

**Shamik Tiwari and Piyush Maheshwari**

---

**The Business of Sustainability in the Airbnb Market: Insights from  
London Using AI-based Analysis** **123**

**Asif Malik**

---

**Track-3-Intelligent Software Applications**

---

**Movement analysis of Individuals Using ML for different window size  
on raw accelerometer Time series Data** **129**

**Radhika.N N, Ashams Mathew and Sujni Paul**

---

**Lightweight Convolutional Network For Automated Photovoltaic  
Defect Detection** **133**

**Arsalan Zahid, Muhammad Hussain, Richard Hill and Hussain Al-  
Aqrabi**

---

**Machine Learning-based Smart Assistance System for the Visually  
Impaired** **139**

**Peer Shah, Hessah Ali Rashed Ali Alhefeiti and Rayan Hussain  
Mohamed Alrayssi**

<b>Domain Modelling For A Lightweight Convolutional Network Focused On Automated Exudate Detection in Retinal Fundus Images</b>	<b>145</b>
<b>Burcu Ataer Aydin, Muhammad Hussain, Richard Hill, Hussain Al Aqrabi</b>	
<b>Artificial Intelligence in Education: An Argument of Chat-GPT Use in Education</b>	<b>151</b>
<b>Hesham Allam, Juan Dempere, Vishwesh Akre, Divya Parakash and Jinesh Ahamed</b>	
<b>Smart Irrigation with Recycled Water: A Promising Solution for Sustainable Farming</b>	<b>157</b>
<b>Ossama Embarak, Najmah Aldhanhani, Manal Almansoori and Jawaher Aldarmaki</b>	
<b>Using Deep Neural Networks to Predict Performance of Software Applications</b>	<b>163</b>
<b>Shadi Ghaith and Azmi Alazzam</b>	
<b>A Comparative Evaluation of Airplane Boarding Strategies with a Novel Method for Sustainable Air Travel</b>	<b>169</b>
<b>Thaeer Kobbaey, Ghazala Bilquise and Ahmad Ali Naqi</b>	
<b>Fissura_Net: An Enhanced Crack Detection and Prediction Network</b>	<b>175</b>
<b>Malathy Jawahar, Neeraja R, Jani Anbarasi and Benson Edwin Raj</b>	
<b>Comparative Analysis of Machine Learning Methods for Multi-Label Skin Cancer Classification</b>	<b>181</b>
<b>Muhammad Imad, Zahoor Ali Khan, Shah Hussain Bangash, Irfan Ullah Khan, Sheeraz Ahmad and Atif Ishtiaq</b>	
<b>An Accurate Brain Tumor Segmentation using Deep Learning</b>	<b>187</b>
<b>Asad Safi, Milan Dordevic, Reem Atassi and Fuad Alhosban</b>	
<b>Understanding Online Customer Touchpoints: A Deep Learning Approach to Enhancing Customer Experience in Digital Retail</b>	<b>193</b>
<b>Zhao Yilin, Amjad Fayoumi and Azar Shahgholian</b>	
<b>Sign Language Recognition</b>	<b>199</b>

**Harshita Khubchandani and Karthick T**

---

**Prediction of Steel Plate Fault Classification Using CART Fuzzy Logic  
and ANFIS Models** **204**

**Mustafa Akpınar and Muhammed Fatih Adak**

---

**Revolutionizing Higher Education: Enhancing Student Learning with  
Cross Question's Gamified Flipped Classroom Approach** **210**

**Mohammed Saleh, Usman Durrani, Rula Azzawi, Osama Hosameldeen  
and Rasha Abousamra**

---

**A Proposed AI Method for Tracking College Students' Academic  
Progress** **215**

**Hesham Allam, Zahoor Khan and Jinesh Ahamed**

---

**Exploring the Intersection of AI and Sustainable Computing:  
Opportunities, Challenges, and a Framework for Responsible  
Applications** **220**

**Nafeth Al Hashlamoun, Nedaa Al Barghuthi and Hatem Tamimi**

---

**Assessing Higher Education Websites in the Middle East:  
A Comparative Analysis of UAE, Saudi Arabia, and Qatar**

**Mohammed Fakrudeen Abdul Rahim, Amala V. Rajan, Asma Hasan  
Mohammed Alameri and Amna Mohammed Lafi Obaid Almheiri Lafi  
Obaid Almheiri** **226**

---

**Heart Rate Detection and Estimation System Using Webcam** **232**

**Sanjukta Sen, Suvradeep Bala and Dr. Gouthaman. P**

---

**ChatGPT and the Chinese Room Argument: An Eloquent AI  
Conversationalist Lacking True Understanding and Consciousness** **238**

**Oussama Hamid**