

2025 Sixth International Conference on Intelligent Data Science Technologies and Applications (IDSTA 2025)

**Varna, Bulgaria
1-4 September 2025**



**IEEE Catalog Number: CFP25Y20-POD
ISBN: 979-8-3315-7429-1**

**Copyright © 2025 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:	CFP25Y20-POD
ISBN (Print-On-Demand):	979-8-3315-7429-1
ISBN (Online):	979-8-3315-7428-4

Additional Copies of This Publication Are Available From:

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

CURRAN ASSOCIATES INC.
proceedings
.com

TABLE OF CONTENTS

GeoBikeLLM: LLM-Powered Bike Route Planning with Air Quality and Vegetation-Aware Geospatial Intelligence	1
<i>Sara Alshamsi, Menatalla Haggag, Lubana Al Rayes, Esraa Alhamid, Mohammad Alsmirat, Isam Mashhour Al Jawarneh</i>	
Optimizing Fetal Health Diagnosis: An Active Learning Framework with LightGBM	9
<i>Sana Fatima, Mamoona Akbar, Haroon Mahmood, Anosha Khan</i>	
Enhancing Arabic L2 Reading Fluency Through AI-Based Activities	16
<i>Mohamed Elsayd El-Zeiny, Salem Alaqtash, Suad Abdalkareem Alwaely, Mohammad Hussein Faqeh</i>	
Performance Analysis of Credit Card Behavior Score Prediction Using Machine Learning	25
<i>Said Salloum, Khalaf Tahat, Ahmed Mansoori, Chaker Mhamdi, Dina Tahat</i>	
A Software-Driven Energy Efficiency Analysis of Cloud-Based and Decentralized Data Marketplaces	28
<i>Nikolaos Zafeiropoulos, Argyro Mavrogiorgou, Athanasios Kiourtis, Dimosthenis Kyriazis</i>	
Impact of Logistics Processes on Data Analytics: The Mediating Role of Green Supply Chain: A Case Study of Jordan Dairy Company.....	36
<i>Ahmad Y. A. Bani Ahmad, Mahmoud Allahham, Firas Tayseer Ayasrah, Wasef Ibrahim Almajali, Ahmad Marai, Hanif Suhairi Abu Bakar, Amani Ali, Musab Mustafa Hijazi</i>	
AI-Driven Smart Detection of Diverse Pallet Types Using RGB and Depth Camera	43
<i>Christina Hofer, Gerhard Kaineder, Daniel Salmen, Erol Bernstein</i>	
Sensitivity Analysis of Capacitated Facility Location Under Cost Constraints: A Big Data Approach.....	51
<i>Tareq Oshan, Nuha Hamada, Mahmoud Sharkawi</i>	
SOK: Exploring Hallucinations and Security Risks in AI-Assisted Software Development with Insights for LLM Deployment.....	57
<i>Mohd Ariful Haque, Sunzida Siddique, Md. Mahfuzur Rahman, Ahmed Rafi Hasan, Laxmi Rani Das, Marufa Kamal, Khalil Sujae, Kishor Datta Gupta, Roy George</i>	
Explainable Brain Activity Classification from Audio Recordings and Convolutional Neural Networks	65
<i>Paul Tavalato, Hubert Schölnast, Oliver Eigner, Antonella Santone, Mario Cesarelli, Fabio Martinelli, Francesco Mercaldo</i>	
Temporal Distance Based Self-Supervised Learning for Human Activity Recognition.....	73
<i>Leonardo Bigelli, Chiara Contoli, Nicholas Kania, Emanuele Lattanzi</i>	
Towards Human-AI Synergy in Requirements Engineering: a Framework and Preliminary Study.....	81
<i>Mateen Ahmed Abbasi, Petri Ihantola, Tommi Mikkonen, Niko Mäkitalo</i>	
Literary Review for a Enhanced Personalized Recommendations with Federated Learning and Multimodel Emotion Recognition	89
<i>Carlos Rodrigues, João Cruz, João Gaspar, André Rodrigues, Isabel Ribeiro, Diogo Martinho, Joaquim Santos, Goreti Marreiros</i>	
Cybersecurity and Criminal Protection of DNA Fingerprinting Data in UAE Law	96
<i>Sultan Abdullah Al-Kutbi, Mohammad Amin Alkrisheh, Khawlah M. Al-Tkhayneh</i>	

Spatiotemporal Clustering of Urban Mobility and Air Quality Hotspots	103
<i>Khawla Ahmed Alshamsi, Maryam Ali Aljallaf, Khawla Ibrahim Alzarooni, Isam Mashhour Al Jawarneh, Sebti Foufou</i>	
Off-Policy Evaluation and Learning of Multi-Action Recommendation Considering Unrecommended Action Rewards	109
<i>Riki Okamura, Toshiharu Sugawara</i>	
Web-Based Data Enrichment Using Multi-Agent AI for Enhanced Company Clustering	117
<i>Yagiz Erdem, Sahin Uregil, Sultan Turhan, Günce Keziban Orman, Doga Yagmur Yilmaz</i>	
An Integer Programming Approach to Chick Placement at a Broiler Production Company	125
<i>Haddiyah Ali, Patrick Hosein</i>	
A Review on Environmental Risk Management and Sustainability Using AI and ML	133
<i>Abir Al Jassasi, Khaleel Alarabi, Mohammad Altamimi, Firas Tayseer Ayasrah, Musab Mustafa Hijazi</i>	
Attack Detection Using Decision Tree and Naïve Bayes with Bat Algorithm-Based Feature Selection	141
<i>Mosleh M. Abualhaj, Mohammad Sh. Daoud, Ali Al-Allawee, Hani Al-Mimi, Mohammed Anbar, Alhamza Munther</i>	
Machine Learning-Enhanced Climate Downscaling for Spatially Explicit Rice Disease and Yield Modeling in Thailand	146
<i>Pramet Kaewmesri, Panu Nueangjumnong, Sasithon Chatsudarat, Jinnawat Tupbamroong, Yutthaphum Khiawmo, Saharat Tabonglek</i>	

Author Index