2024 13th International **Conference on Computer Technologies and Development** (**TechDev 2024**)

Huddersfield, United Kingdom 9-11 October 2024



IEEE Catalog Number: CFP24DO6-POD ISBN:

979-8-3315-3978-8

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:
 CFP24DO6-POD

 ISBN (Print-On-Demand):
 979-8-3315-3978-8

 ISBN (Online):
 979-8-3315-3977-1

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



2024 13th International Conference on Computer Technologies and Development (TechDev) TechDev 2024

Table of Contents

Preface	viii
Organizing Committee	
Speakers	
Sponsors	xvii
Software Design and Application Development	
Code Re-use Recommendation Based on Software Requirements using Natural Language	
Processing in Python	1
Hareem Farooqi (National University of Sciences and Technology (NUST), Pakistan), Wasi Haider Butt (National University of Sciences and	
Technology (NUST), Pakistan), and Obaid Ullah Khan (TEO International,	
Pakistan)	
Development of a Machine Learning-Based Web Application for Predicting CO2 Emissions in	
Light-Duty Vehicles	6
(University of Huddersfield, United Kingdom)	
Refining Interaction Design: A Study on Usability and User Experience in X-Mech	11
William P. Rey (Mapua University, Philippines)	
E-Government in Oman: Trends and Future Perspectives	16
Mamoun Awad (Sultan Qaboos University, Oman)	
Image Amelouis and Ducassina Matheda	
Image Analysis and Processing Methods	
Non-Invasive Breast Cancer Screening: Leveraging InceptionV3 and GoogLeNet for Thermal	
Image Analysis	21
(Maharaja Institute of Technology, India), and Ramez Alkhatib (Leibniz	
Lung Center Borstel, Germany)	
Rendering 3D Quadratic Bézier Curves by Accumulation	27
Yufan Wang (Independent researcher)	

PM4Urban: A Scriptable Parametric Modeling Interface for Conceptual Urban Layout Design using PM4VR
Enhancing Object Detection for Autonomous Machines in Private Construction Sites through Federated Learning
Detect Fire using Weighted Box Fusion Algorithm
Enhancing Search and Recommendation Systems with AI-Powered Semantic Indexing and Multi-Modal Integration: An Evaluation using OpenAI's Embedding API and PineconeDB
The Application of Machine Learning in Student Performance Prediction in Higher Education Institutions: A Systematic Literature Review
Disruptive Technology Research Pathway: Term and Keyword View
Leveraging Artificial Intelligence and Large Language Models for Enhanced Teaching and Learning: A Systematic Literature Review
Network Based Computing and Application Development
AidVenture: A Mobile Application Tracker for Lower-Limb Rehabilitation Integrated with Internet-of-Things Based Four-Legged Walker
Real-Time Resource Management Mechanism for Mobile IoT Devices in 5G-Enabled Edge Computing
Abdullah M. Alqahtani (Jazan University, Kingdom of Saudi Arabia)

A Taxonomy of Factors that Influence the Multiple-Cloud Computing Utilization	, 91
AidConnect: A Telehealth Web-Based System with Smartwatch Integration for Enhanced Medical Tracking Support in Aged Care Facilities for Caregivers of Elderly Individuals in the	
PhilippinesPhilippines	. 96
Mary Jane C. Samonte (Mapua University, Philippines), Frances Denielle	
C. Magno (Mapua University, Philippines), Kimberly Gale Y. Ang (Mapua	
University, Philippines), and Kim Emmanuelle M. Lalap (Mapua	
University, Philippines)	
Author Index	103