2024 International Symposium on Computer Science and **Educational Technology** (ISCSET 2024)

Lauta/Laubusch, Germany 17-19 July 2024



IEEE Catalog Number: CFP24RZ3-POD ISBN:

979-8-3503-9081-0

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:
 CFP24RZ3-POD

 ISBN (Print-On-Demand):
 979-8-3503-9081-0

 ISBN (Online):
 979-8-3503-9080-3

Additional Copies of This Publication Are Available From:

Curran Associates, Inc 57 Morehouse Lane Red Hook, NY 12571 USA Phone: (845) 758-040

Phone: (845) 758-0400 Fax: (845) 758-2633

E-mail: curran@proceedings.com Web: www.proceedings.com



Table of Content

Computer Science

A New Approach for Early Detection of Vulnerabilities Across the Automotive Software Development...1

Dimitrios Datsogiannis, Ariane Heller and Wolfram Hardt

Comparative Study for Monocular Depth Detection Models on Embedded Systems...6

Abeer Aly Moussa, Shadi Saleh and Wolfram Hardt

Cross Scene Hyperspectral Image Classification Combined with Fusional Spatial-Spectral Attention...12

Defei Li, Hui Yang, Xue Wang, Haibin Wu, Xinmiao Zhou, Xiaoyu Yu and Aili Wang

Dangerous Goods Detection in X-ray Security Inspection Images Based on Improved YOLOv8...18

Pengfei Yuan, Xue Wang, Xinmiao Zhou, Xiaoyu Yu, Aili Wang and Haibin Wu

Decentralized UAV Hangar: A Study for Water Rescue Missions...23

Reda Harradi, Ariane Heller and Wolfram Hardt

Design and Implementation of VRUs Detection and Speed Estimation Using an Uncalibrated Top-view Perspective Camera...27

Khulan Khalzaa, Stephen Karungaru, Kenji Terada and Altangerel Ayush

Detection of Rice Sheath Blight Leaf Based on Improved YOLOV8 Algorithm...33

Yuze Zhang, Yuxuan Zhou, Hui Yang, Liming Jian, Fangyu Shi, and Haibin Wu

Enhancing SOTIF Analysis using Model-Based Systems Engineering and Virtual Validation with Focus on Responsibility-Sensitive Safety...38

Vignesh Mohan, Reda Harradi and Wolfram Hardt

Implementation of Machine Learning and Fuzzy-Logic Rules for Intelligent Tutoring System Design on Photography...44

Ghita Athalina and Tomonori Hashiyama

Inner and Outer Frame-based Continues Object-Tracking for MAV-based Inspection...49

Batbayar Battseren, Md. Abdul Awal and Wolfram Hardt

Intelligent Food Identification System Using Improved YOLOv8...55

Francia Nitiavintokana, Md Abdur Rouf, Xiaoyu Yu, Haibin Wu, Aili Wang and Yuji Iwahori

Intelligent Shrimp Monitoring System Based on YOLOv8 and Jetson Nano...60

Siqi Yan, Xinyu Liu, Haoran Lv, Xuxi Zhao, Miaomiao Liu and Aili Wang

Neural Understanding of STEM Activities...65

Ryan Cho, Mobasshira Zaman, Kyu Taek Cho and Jaejin Hwang

Research on the $\beta\textsc{-VAE-DDRRN-BFA}$ Tool Wear Detection Algorithm...69

Kaige Xu, Xiaoming Sun, Yan Chen, Yongliang Wang and Bochao Su

Run Time and Accuracy of Machine Learning Algorithms for Speaker Identification...75

Stephan Lede, René Schmidt, and Wolfram Hardt

The Algorithm for Classifying Text Data in Social Networks...81

Bakhrikhon Otakhonova, Yusuf Yuldoshev, Nasibakhon Rasulova, and Dilnoza Zaripova

The Effectiveness of Gamified Applications for Communicating Complex Bureaucratic Topics...85

Fabius Benjamin Quien, Lilly Siegel, Erwin Dieter Hausmann, Victoria Kitte, Lara Anna Stahlberg, Theodor Tran, Leander Benedikt Stedtler, Maria Bianca Florea, Manuel Heinzig, Matthias Vodel, and Marc Ritter

Towards Vision Based Bi-Cycles Detection and an Autonomous Decision Making System for Driving Situation Awareness...90

Julkar Nine, Ayushkumar Mehta, Sai Rohit Rajkumar and Wolfram Hardt

Educational Technology

A Study of a Predictive Validity of Mongolian University Admission Tests...97

Amartuvshin Amarzaya, Jargalsaikhan Ankhbayar and Mend Narantuya

Assessment of Higher Education Academic Program Outcomes and Improvement of Quality Assurance Criteria...101

Omboosuren Bolorsaikhan, Sugar Enkhtuvshin, Uranchimeg Tudevdagva, Oyunchimeg Battumur, Myadagmaa Bazargur, Yanjmaa Ochirbat, Bavuudorj Soyolmaa, Soyol-Erdene Sanjaa, and Oyun-Erdene Namsrai

Development of Pedagogical Creativity of Lecturers in Training Courses Through Innovative Methodological Projects: A Case of Uzbekistan...105

Shakhnoza Pozilova, Djamshid Sultanov, Feruza Zakirova, Madina Zakirova, Adashboyev Shavkiddin and Ibraymov Askar

Enhancing College Students' Critical Thinking Through Classroom News Literacy Intervention...110

Swagata Ghosh, Gajendra Singh Chauhan, and Renu Kotwal

Measurement Models for Group-Peer Assessment of Project-Based Learning in Software Engineering...116 Paul Hubert Vossen and Suraj Ajit

Predictive Learning Analytics Utilizing Formative Assessments and Recommender System for Study Success...121 Ummay Ubaida Shegupta, Md Shoriful Islam and Wolfram Hardt

Subjective and Objective Evaluation of Mock Classes for Faculty Development...126

Satori Hachisuka, Kayoko Kurita, and Shin'ichi Warisawa

The Evaluation Result Based on the SURE Model: Case of Samarkand Branch of TUIT...129

 $Ilkhom\ Boynazarov,\ Uranchimeg\ Tudevdagva,\ Gulnoza\ Safarova,\ and\ Robiya\ Raxmonova$

The ICT Competence Framework for Formal and Non-Formal Educational Training in Mongolia...134

Itgel Miyejav, Buyandelger Banzragch, Lut-Ochir Vanganjil and Oyungoo Enkhbold

The Impact of Tutor Quality on E-learning Acceptance: A Mediating Effect of E-Assessment in Public Universities of Malaysia...140

Muhammad Imran, Adnan ul Haque and Eugene Kozlovski

The Level of Digital Literacy Among Students in Uzbekistan: Assessing Skills and Perspectives...143

Nasibakhon Rasulova, Dilnoza Zaripova, Bahrikhon Otakhonova, Feruza Zakirova, Gulnora Tashmukhamedova and Yuliya Anufriyeva

The Readiness Evaluation of University Ranking: Case of Mongolian University of Science and Technology...148

Batdorj Davaagombo, Bayar-Erdene Lkhagvasuren, Namnan Tumurpurev and Narantsetseg Yadmaa