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| Autore                  | Gerber AURONA                                                                                                                                                                                                                                                                                                                                                                                                       |
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| Altri autori (Persone)  | MaritzJACQUES<br>PillayANBAN W                                                                                                                                                                                                                                                                                                                                                                                      |
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| Soggetti                | Artificial intelligence<br>Computer engineering<br>Computer networks<br>Computer science - Mathematics<br>Education - Data processing<br>Image processing - Digital techniques<br>Computer vision<br>Artificial Intelligence<br>Computer Engineering and Networks<br>Mathematics of Computing<br>Computers and Education<br>Computer Imaging, Vision, Pattern Recognition and Graphics                              |
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| Nota di contenuto       | -- Algorithmic and Data Driven AI. -- Parameter-Efficient Fine-Tuning of Pre-trained Large Language Models for Financial Text Analysis. -- Optimally traversing explainability in Bayesian networks via the graphical Lasso. -- Assessing multilinguality of topic models on a short-text South African languages dataset. -- Cascaded RFM-based Fuzzy Clustering Model for Dynamic Customer Segmentation in Retail |

Sector. -- Automatic Assessment of Speech Impediment for South African Early Literacy Readers. -- Automated Enhancement of isiZulu Data Collection for the African Health Research Institute. -- AI in Education: An Analysis of Large Language Models for Twi Automatic Short Answer Grading. -- Enhancing Credit Risk Assessment through Transformer Based Machine Learning Models. -- Predicting and discovering weather patterns in South Africa using Spatial-Temporal Graph Neural Networks. -- Benchmarking Political Bias Classification with In-Context Learning: Insights from GPT-3.5, GPT-4, LLaMA-3, and Gemma-2. -- Uncovering the ANPR Performance Gap: A Commercial Systems Analysis. -- Neural Network-based Vehicular Channel Estimation Performance: Effect of Noise in the Training Set. -- Deep Learning-based Network Intrusion Detection Systems: A Systematic Literature Review. -- Impact of batch normalization on convolutional network representations. -- Does simple trump complex? Comparing strategies for adversarial robustness in DNNs. -- A novel approach to lion re-Identification using vision transformers. -- Assessing Data-Driven of Discriminative Deep Learning Models in Classification Task Using Synthetic Pandemic Dataset. -- Deep Neural Network Compression for Lightweight and Accurate Fish Classification. -- Pre-training a Transformer-Based Generative Model Using a Small Sepedi Dataset. -- Automated Fish Detection in Underwater Environments: Performance Analysis of YOLOv8 and YOLO-NAS. -- Socio-technical and human-centred AI (Information Systems). -- The Effect of Generative AI on Cognitive Thinking Skills in Higher Education Institutions: A Systematic Literature Review. -- LLMs as Enablers of Accessible Business Process Modeling. -- The role of artificial intelligence in modern language translation and its societal applications: A systematic literature review. -- Deep Learning Forecasting of Photovoltaics Output Using Digital Twin Data. -- Responsible and Ethical AI (Philosophy, Law and Humanities). -- Requirements Engineering (RE) in Artificial Intelligence (AI) Systems Implementation: The Need to Emphasize Non-Functional Requirements (NFRs) for Ethical AI. -- Democratic AI: Justification for a Broad View of Public Reason. -- Symbolic AI and Knowledge Representation and Reasoning. -- Towards Propositional KLM-Style Defeasible Standpoint Logics. -- Non-monotonic Extensions to Formal Concept Analysis via Object Preferences. -- Knowledge Compilation for KLM-Style Defeasible Reasoning.

## Sommario/riassunto

This book constitutes the refereed proceedings of the 5th Southern African Conference on Artificial Intelligence Research, SACAIR 2024, held in Bloemfontein, South Africa, during December 2–6, 2024. The 29 full papers presented in these proceedings were carefully reviewed and selected from 101 submissions. The papers are organized in the following topical sections: algorithmic and Data Driven AI; socio-technical and human-centred AI (Information Systems); responsible and Ethical AI (Philosophy, Law and Humanities); symbolic AI and Knowledge Representation and Reasoning.