1. Record Nr. UNINA9910743214703321

Titolo	Artificial intelligence in education : emerging technologies, models and applications / / edited by Eric C. K. Cheng [and three others]
Pubbl/distr/stampa	Singapore : , : Springer, , [2022] ©2022
ISBN	981-16-7527-9 981-16-7526-0
Descrizione fisica	1 online resource (369 pages)
Collana	Lecture Notes on Data Engineering and Communications Technologies ; ; v.104
Disciplina	006.3
Soggetti	Artificial intelligence - Educational applications Educational technology
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Intro -- Conference Committees -- Preface -- Contents -- About the Editors -- An Overview of AI in Education -- Towards a Tripartite Research Agenda: A Scoping Review of Artificial Intelligence in Education Research -- 1 Introduction -- 2 Background -- 2.1 What is AI, Anyway? -- 2.2 How is AI Impacting Education? -- 3 Methodology -- 3.1 Research Questions -- 3.2 Data Source -- 3.3 Search Terms and Searching Strategies -- 3.4 Eligibility Criteria -- 3.5 Coding and Analysis -- 4 Results -- 4.1 Journals Distribution and Article Count -- 4.2 Geographic Distributions -- 4.3 Subject Areas -- 4.4 Key AI Technics and Technologies Involved -- 4.5 Research Focus of AIED -- 5 Discussions and Implications -- 6 Limitations and Future Review -- References -- Analysis of Research Progress in the Field of Educational Technology in China-Research on Knowledge Graph Based on CSSCI (2015-2020) -- 1 Introduction -- 2 Data Sources and Research Methods -- 2.1 Sample Collection -- 2.2 Research Methods -- 3 Analysis of Research Results -- 3.1 Analysis of the Amount of Papers Issued -- 3.2 Distribution of Academic Research Institutions -- 3.3 Distribution of High-Output and High-Influencers -- 3.4 Research Hotspots and Topics -- 3.5 Research Trend Analysis -- 4 Research Conclusions -- References -- AI Technologies and Innovations --

A Two-Stage NER Method for Outstanding Papers in MCM -- 1 Introduction -- 2 Literature Review -- 3 Our Method -- 3.1 Descriptive Statistical Analysis -- 3.2 Pre-processing -- 3.3 POS Labeling -- 3.4 Two-Stage NER -- 3.5 Two-Stage NER Method Applying -- 4 Conclusion and Future Work -- References -- Comprehensibility Analysis and Assessment of Academic Texts -- 1 Introduction -- 2 Related Work -- 3 Applied Methodology -- 3.1 Document Representation -- 3.2 Comprehensibility Measures -- 3.3 Methodology for Evaluation and Feedback.
4 Document Collection -- 5 Comprehensibility Measures in Academic Levels -- 5.1 Problem Statement Section -- 5.2 Justification Section -- 5.3 Results Section -- 5.4 Analysis of Measures in Academic Text Collection -- 6 New Texts Evaluation and Feedback -- 6.1 Example of Feedback Visualization of an ACT-Level Text -- 6.2 Example of Feedback Visualization of Doctoral level Text -- 6.3 Additional Comments -- 7 Conclusions -- References -- Deep Learning Techniques for Automatic Short Answer Grading: Predicting Scores for English and German Answers -- 1 Introduction -- 2 Related Work -- 3 Experimental Setup -- 3.1 Evaluation Metrics -- 3.2 Corpora -- 3.3 English Short Answer Grading Data Set -- 3.4 German Short Answer Grading Data Set -- 4 Techniques -- 4.1 Feature Extraction Architecture -- 4.2 Fine-Tuning Architecture -- 5 Experiments and Results -- 5.1 English Automatic Short Answer Grading -- 5.2 German Automatic Short Answer Grading -- 5.3 Experiments with Removed and Added Annotations on the German Data Set -- 5.4 Final Results -- 6 Experiments and Results -- References -- Solving Chemistry Problems Involving Some Isomers of Benzene Ring -- 1 Introduction -- 1.1 Research Background -- 1.2 Research Problem and Challenge -- 2 Literature Review -- 3 Automatic Solution Based on the Syntactic-Semantic Mode -- 4 Automatic Solution Isomers with Benzene Ring -- 4.1 Text Processing -- 4.2 Figure Recognition and Transformation -- 5 Knowledge Base Matching -- 6 Automatic Diagnosis -- 7 Experiment -- 8 Conclusion -- References -- Automatic Question Answering System for Semantic Similarity Calculation -- 1 Introduction -- 2 System Analysis and Theoretical Conception -- 2.1 Chinese Word Segmentation Tool -- 2.2 Chinese Word Segmentation Algorithm -- 3 System Module Design -- 3.1 Chinese Word Segmentation System -- 3.2 Problem Classification and Keyword Generation.
3.3 Sentence Similarity Calculation -- 4 Core Algorithm -- 4.1 Word Segmentation Module -- 4.2 Problem Classification -- 4.3 Keyword Extraction -- 4.4 Word Similarity Calculation -- 4.5 Sentence Similarity Calculation -- 4.6 System Implementation Results -- 5 Conclusions -- References -- Solving Shaded Area Problems by Constructing Equations -- 1 Introduction -- 2 The Outline of the Proposed Solver -- 2.1 The Shaded Area Problem -- 2.2 The Framework of the Auto Solver -- 3 Solver for Finding the Shaded Area -- 3.1 Equation Construction from Geometric Diagram -- 3.2 Constructing the Linear System and Problem Solving -- 4 Experimental Result and Evaluation -- 5 Conclusion -- References -- Cross-Lingual Automatic Short Answer Grading -- 1 Introduction -- 2 Related Work -- 3 Experimental Setup -- 3.1 Evaluation Metrics -- 3.2 Data Set -- 3.3 Natural Language Processing Models -- 4 Experiments and Results -- 5 Conclusion and Future Work -- References -- Application of Improved ISM in the Analysis of Undergraduate Textbooks -- 1 Introduction -- 2 Research Methods -- 3 Knowledge Element Analysis -- 3.1 Knowledge Element Extraction -- 3.2 Construction of Adjacency Matrix -- 3.3 Reachability Matrix Construction -- 3.4 Hierarchical Relationship

Determination -- 4 Hierarchical Model Analysis -- 5 Conclusion and Suggestion -- References -- Design of Student Management System Based on Smart Campus and Wearable Devices -- 1 Introduction -- 1.1 The Low Level of Information Management Leads to Low Efficiency -- 1.2 It is Difficult to Carry Out Differentiated Management According to the Characteristics of Individual Students -- 1.3 Unable to Obtain the Psychological Changes of the Managed -- 2 System Design -- 2.1 System Overall Design -- 2.2 System Detailed Design -- 3 Key Technology Analysis -- 3.1 Location Algorithm Based on WIFI.
3.2 Human Emotion Discrimination Algorithm Based on Wearable Devices -- 3.3 Location Algorithm Based on RFID -- 4 Conclusion -- References -- Proving Geometric Problem by Adding Auxiliary Lines-Based on Hypothetical Test -- 1 Introduction -- 2 Literature Review -- 2.1 Understanding of Plane Geometry Image -- 2.2 Resolution Principle -- 2.3 Common Guidelines for Adding Auxiliary Lines -- 3 Algorithm Design and Experiment -- 3.1 Algorithm Design -- 3.2 Algorithm Complexity Proof -- 3.3 Experiment -- 4 Conclusion -- References -- A Virtual Grasping Method of Dexterous Virtual Hand Based on Leapmotion -- 1 Introduction -- 2 Virtual Grasping Based on Forward Kinematics -- 2.1 Virtual Hand Modeling -- 2.2 Virtual Hand Motion -- 2.3 Judgment of Objects Grasped by Virtual Hands -- 3 Dexterous Virtual Hand Grasping Based on Leapmotion -- 3.1 Framework of Dexterous Virtual Hand Grasping -- 3.2 Virtual Model -- 3.3 Judgment of Objects Grasping by Virtual Hand Based on Non-Force Grasping Criteria -- 3.4 Virtual Hand Motion Based on Finger Trajectory Resampling and Inverse Kinematics -- 4 Implementation and Evaluation -- 4.1 Participants -- 4.2 Experimental Setup -- 4.3 Tasks and Processes -- 4.4 Experimental Results and Discussion -- 5 Conclusion -- References -- Performance Evaluation of Azure Kinect and Kinect 2.0 and Their Applications in 3D Key-Points Detection of Students in Classroom Environment -- 1 Introduce -- 1.1 Research Background -- 1.2 Research Challenges -- 1.3 Goals and Contributions -- 1.4 Paper Structure -- 1.5 Overview of Related Research -- 2 Evaluate the Accuracy of Depth Data Collected at Close Range from Azure Kinect and Kinect 2.0 -- 2.1 Experimental Design -- 2.2 Experimental Result -- 3 Evaluate the Performance of Depth Data Collected at Different Distances from Azure Kinect and Kinect 2.0 -- 3.1 Experimental Design.
3.2 Experimental Result -- 4 Evaluate the Effect of 3D Key-Points Detection and the Effect of ID Assignment for Multiple Persons in Various Scenes in the Classroom of Azure Kinect and Kinect 2.0 -- 4.1 Experimental Design -- 4.2 Experimental Result -- 5 Conclusion -- References -- Research on Remote Sensing Object Parallel Detection Technology Based on Deep Learning -- 1 Introduction -- 2 YOLT Object Detection Model (You Only Look Twice) -- 2.1 Summary -- 2.2 Mechanism of Convolutional Neural Network -- 2.3 Brief Introduction of Yolov2 Model -- 2.4 Network Structure of YOLT Model -- 3 Research on Parallel Target Detection Based on Yolt -- 3.1 Parallel Algorithm Description -- 3.2 Image Segmentation Algorithm Description Method -- 3.3 Parallel Goal Integration -- 3.4 Result Analysis -- References -- Research on Expression Processing Methods of Children with Autism in Different Facial Feature Types -- 1 Introduction -- 2 Experimental Method -- 2.1 Participants -- 2.2 Experimental Design -- 2.3 Experimental Materials -- 2.4 Experimental Equipment -- 2.5 Experimental Procedures -- 2.6 Data Analysis Indicators -- 3 Results -- 3.1 Expression Recognition Rate Analysis -- 3.2 Analysis of Eye-Tracking Data -- 4 Discussion -- 4.1 Expression Processing

Characteristics of ASD Children Under LSF Conditions -- 4.2 Expression Processing Characteristics of ASD Children Under the Condition of Prominent Local Features -- 5 Conclusion -- References -- Teaching and Assessment Across Curricula in the Age of AI -- Improving Java Learning Outcome with Interactive Visual Tools in Higher Education -- 1 Introduction -- 2 Literature Review -- 3 Interactive Visual Tools for Learning Java -- 4 Research Design and Experiment -- 4.1 Java Course -- 4.2 Interactive Visual Tools -- 4.3 Participants -- 4.4 Experiment -- 5 Results -- 6 Discussion -- 7 Conclusion -- References.
Interdisciplinarity of Foreign Languages Education Design and Management in COVID-19.