

1. Record Nr.	UNISA996464528703316
Titolo	AlxIA 2020 - advances in artificial intelligence : XIXth international conference of the Italian association for artificial intelligence, virtual event, November 25-27, 2020, revised selected papers // editors, Matteo Baldoni, Stefania Bandini
Pubbl/distr/stampa	Cham, Switzerland : , : Springer, , [2021] ©2021
ISBN	3-030-77091-5
Descrizione fisica	1 online resource (467 pages)
Collana	Lecture notes in computer science. Lecture notes in artificial intelligence ; ; Volume 12414
Disciplina	006.3
Soggetti	Artificial intelligence
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Intro -- Preface -- Organization -- Contents -- Explainable Artificial Intelligence -- Exploring Contextual Importance and Utility in Explaining Affect Detection -- 1 Introduction -- 2 Background -- 3 Contextual Importance and Contextual Utility -- 4 Dataset Description and Preprocessing -- 5 Outcome Explanations -- 5.1 Generated Explanation on WESAD -- 5.2 Generated Explanation on MAHNOB-HCI -- 6 Conclusion and Future Works -- References -- Explainable and Ethical AI: A Perspective on Argumentation and Logic Programming -- 1 Introduction -- 2 Explanation: Meaning and Roles -- 3 Logic Techniques for XAI -- 3.1 Why Logic? -- 3.2 User Requirements for XAI -- 3.3 Logic Approaches and Technologies Involved for XAI -- 4 System Architecture -- 4.1 Main Enabling Technologies -- 5 Preliminary Investigation: Examples -- 6 Related Works and Discussion -- 7 Conclusion -- References -- Understanding Automatic Pneumonia Classification Using Chest X-Ray Images -- 1 Introduction -- 2 Related Work -- 3 Proposed Approach -- 3.1 Classification -- 3.2 Visual Explanations -- 4 Experimental Protocol -- 4.1 Dataset Description -- 4.2 Training Phase -- 4.3 Performance Metrics -- 5 Results and Discussion -- 5.1 Classification Performance -- 5.2 Assessing Explanations from GradCAM -- 6 Conclusion -- References -- SeXAI: A

Semantic Explainable Artificial Intelligence Framework -- 1 Introduction
-- 2 Related Work -- 3 The Framework -- 4 SeXAI in Action -- 4.1 Quantitative Evaluation -- 4.2 Discussion -- 5 Conclusions -- References -- Explainable Attentional Neural Recommendations for Personalized Social Learning -- 1 Introduction -- 2 WhoTeach -- 3 Main Concepts and Definitions -- 4 GAT Models -- 5 Numerical Experiments -- 6 Expected Results for XAM -- 7 Conclusions and Future Works -- References -- Evolutionary and Population-Based Evolutionary Optimization of Graphs with GraphEA -- 1 Introduction and Related Works -- 2 GraphEA -- 2.1 Representation -- 2.2 Evolutionary Algorithm -- 3 Experimental Evaluation -- 3.1 Regression -- 3.2 Text Extraction -- 3.3 Robotic Controller Optimization -- 4 Concluding Remarks -- References -- Where the Local Search Affects Best in an Immune Algorithm -- 1 Introduction -- 2 The Hybrid Immune Algorithm -- 2.1 Hybrid-IA for the Community Detection -- 3 Experimental Results -- 3.1 Functional Sensitivity Analysis -- 4 Conclusions -- References -- Advances in Argumentation in Artificial Intelligence -- An Efficient Algorithm for Semi-stable Extensions -- 1 Introduction -- 2 Argumentation Framework and Complete Labelling Encodings -- 3 Overview of AASExts -- 4 Experimental Assessment of Encodings -- 5 Evaluation of AASExts -- 5.1 Experimental Setup -- 5.2 Experimental Results -- 6 Conclusion -- References -- Introducing General Argumentation Frameworks and Their Use -- 1 Introduction -- 2 Basics and Related Work -- 3 The Generalized Argumentation Framework -- 3.1 Mapping from Existing Frameworks -- 3.2 Mapping to Existing Frameworks -- 4 Sample Extensions of GAFs -- 4.1 Adding User and Topic Information -- 4.2 Expressing Evidence and Necessity -- 5 Matrix Representation and Examples -- 6 Conclusion -- References -- Towards an Implementation of a Concurrent Language for Argumentation -- 1 Introduction -- 2 Abstract Argumentation Frameworks -- 3 A Four-State Labelling Semantics -- 4 A Concurrent Argumentation Language -- 4.1 Semantics of Failure -- 4.2 Belief Revision and the AGM Framework -- 5 Implementation -- 6 Related Work -- 7 Conclusion and Future Work -- References -- Planning and Scheduling -- A Fault-Tolerant Automated Flight Path Planning System for an Ultralight Aircraft -- 1 Introduction -- 1.1 Related Work -- 1.2 System Description.

2 Flight Path Planning System -- 2.1 Flight Path Planning in PDDL+ -- 2.2 Trajectory Planning Under Non-nominal Conditions -- 3 System Validation and Results -- 3.1 Test Scenarios -- 3.2 Test Results and Discussion -- 4 Conclusion and Future Work -- References -- In Defence of Design Patterns for AI Planning Knowledge Models -- 1 Introduction -- 2 A Knowledge Engineering (Historical) Perspective -- 3 Beyond Knowledge Encoding: Explainability -- 4 Example: The Mobile Design Pattern -- 5 Functionalities of the Centralised Repository -- 6 Discussion on Languages for Planning Knowledge Models -- 7 Conclusion -- References -- Solving Operating Room Scheduling Problems with Surgical Teams via Answer Set Programming -- 1 Introduction -- 2 Answer Set Programming -- 3 Problem Description -- 3.1 Informal Description -- 3.2 Mathematical Formulation -- 4 ASP Encoding for ORS with Surgical Teams -- 4.1 Data Model -- 4.2 Encoding -- 5 Experimental Results -- 5.1 Benchmarks -- 5.2 Results -- 5.3 Extended Analysis -- 6 Related Work -- 7 Conclusions -- References -- Artificial Intelligence and Robotics -- Optimal Control of Point-to-Point Navigation in Turbulent Time Dependent Flows Using Reinforcement Learning -- 1 Introduction -- 2 Methods -- 3 Results (Time-Independent Flows) -- 3.1 Shortest Time, No Energy Constraints -- 3.2 Minimal Energy Consumption -- 4 Results (Time-Dependent

Flow) -- 5 Conclusions -- References -- Brain-Driven Telepresence
Robots: A Fusion of User's Commands with Robot's Intelligence -- 1
Introduction -- 2 Taxonomy of Shared Approaches -- 3 Shared
Autonomy Approaches Based on Pre-coded Behaviors -- 4 Shared
Intelligence Approach Based on Policies -- 5 ROS-Neuro: A Common
Framework for Developing Neurorobotics Applications -- 6 Conclusion
-- References.

Knowledge-Driven Conversation for Social Robots: Exploring
Crowdsourcing Mechanisms for Improving the System Capabilities -- 1
Introduction -- 2 Knowledge-Driven Conversation -- 3 Crowdsourcing
Mechanisms for the Run-Time Expansion of the Knowledge Base -- 4
Recognition of Relevant Concepts -- 4.1 Dialogflow: Agents and Intents
-- 4.2 Dialogflow Agent Training -- 5 Experiment and Discussion -- 6
Conclusions -- References -- Natural Language for Artificial
Intelligence -- Grounding Dialogue History: Strengths and Weaknesses
of Pre-trained Transformers -- 1 Introduction -- 2 Related Work -- 3
Dataset -- 4 Models -- 4.1 Language-Only Encoders -- 4.2 Multimodal
Encoders -- 5 Experiments -- 5.1 Task Success -- 5.2 Are Models
Sensitive to the Strategy Seen During Training? -- 5.3 The Role of the
Last Question -- 5.4 How Attention Is Distributed Across Turns -- 5.5
Qualitative Evaluation -- 5.6 Details for Reproducibility -- 6 Conclusion
-- References -- Breaking Down High-Level Robot Path-Finding
Abstractions in Natural Language Programming -- 1 Introduction -- 2
Previous Work -- 3 Problem Formulation and System Design -- 3.1
High-Level to Low-Level (HL2LL) System Overview -- 3.2 Map
Representation -- 3.3 Lee's Algorithm and Its Adaption -- 3.4 Path
Information Extraction for NLPr -- 3.5 Path to Low-Level Sentence --
3.6 Generating Code from NL Specifications Using the NLPr System --
3.7 Formal Validation Using HFSM -- 4 Experimental Results -- 4.1
Case Study -- 5 Future Work -- 6 Conclusion -- References --
Experimental Evaluation of Algorithms for Solving Problems with
Combinatorial Explosion -- Interleaving Levels of Consistency
Enforcement for Singleton Arc Consistency in CSPs, with a New Best (N)
SAC Algorithm -- 1 Introduction -- 2 Background -- 2.1 General
Concepts -- 2.2 (N)SAC Algorithms -- 3 To Interleave or Not: Some (N)
SAC Variants.
4 (N)SAC with and Without AC: Initial Experiments -- 5 (N)SAC with and
Without AC: More Extended Tests -- 6 Comparisons with an AC4-Style
Interleaving Algorithm -- 7 Other Kinds of Interleaving -- 8
Conclusions -- References -- Improving the Efficiency of Euclidean TSP
Solving in Constraint Programming by Predicting Effective Nocrossing
Constraints -- 1 Introduction -- 2 Preliminaries -- 3 Avoiding
Crossings -- 4 The Collected Data -- 5 Machine Learning the Goodness
of Constraint Propagators -- 6 Experiments -- 6.1 Results of the
Machine Learning Step -- 6.2 Results of the Overall Euclidean TSP
Solver -- 7 Related Work -- 8 Conclusions and Future Work --
References -- From Contrastive to Abductive Explanations and Back
Again -- 1 Introduction -- 2 Preliminaries -- 3 Contrastive vs.
Abductive Explanations -- 3.1 Defining Abductive Explanations (AXps)
-- 3.2 Defining Contrastive Explanations (CXps) -- 3.3 Relating
Abductive and Contrastive Explanations -- 4 Extracting and
Enumerating Explanations -- 5 Experimental Evaluation -- 5.1
Enumeration of CXps -- 5.2 Enumeration of CXps and AXps -- 6
Conclusions -- References -- Artificial Intelligence for an Ageing
Society -- Towards Positive Artificial Intelligence -- 1 Introduction -- 2
Positive Psychology -- 3 Positive Technologies -- 4 Intelligent Agents
-- 5 Positive Artificial Intelligence -- 5.1 Illustrative Scenario I:
Improvements in Walking Experience for Elderly Pedestrians in Urban

Roads -- 5.2 Illustrative Scenario II: Extended Interaction with Medical Devices for Treatment of Noncommunicable Diseases -- 6 Conclusion
-- References -- Management at the Edge of Situation Awareness During Patient Telemonitoring -- 1 Introduction -- 2 Background and Related Work -- 3 Edge Computing Cognitive Architecture -- 3.1 System Architecture -- 3.2 CPAC: The Clinical Pathway Adherence Checker Module.
3.3 CPAD: The Clinical Pathway Anomaly Detection Module.
