

1. Record Nr.	UNINA9910484595103321
Titolo	Artificial Intelligence in Medicine : 16th Conference on Artificial Intelligence in Medicine, AIME 2017, Vienna, Austria, June 21-24, 2017, Proceedings // edited by Annette ten Teije, Christian Popow, John H. Holmes, Lucia Sacchi
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2017
ISBN	3-319-59758-2
Edizione	[1st ed. 2017.]
Descrizione fisica	1 online resource (XXV, 369 p. 75 illus.)
Collana	Lecture Notes in Artificial Intelligence, , 2945-9141 ; ; 10259
Disciplina	610.285
Soggetti	Artificial intelligence Data mining Machine theory Computer programming Compilers (Computer programs) Artificial Intelligence Data Mining and Knowledge Discovery Formal Languages and Automata Theory Programming Techniques Compilers and Interpreters
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Intro -- Preface -- Organization -- Invited Talks -- SNOMED CT: The Thorny Way Towards Interoperability of Clinical Routine Data -- Collaborative, Exploratory Question Answering Against Medical Literature -- Contents -- Ontologies and Knowledge Representation -- Studying the Reuse of Content in Biomedical Ontologies: An Axiom-Based Approach -- 1 Introduction -- 2 Methods -- 2.1 Types of Term Reuse in Biomedical Ontologies -- 2.2 Characterisation of Ontologies Based on Reuse -- 2.3 Identification of Hidden Axioms -- 2.4 A Modular Strategy for Increasing the Amount of Knowledge that is Already Being Reused -- 3 Results -- 3.1 Experimental Setup -- 3.2 Analysis of the Reused Terms URIs -- 3.3 Analysis by the Type of Reuse

-- 3.4 Analysis of Hidden Axioms and Terms Already Reused -- 4  
Discussion and Conclusions -- References -- Ontological  
Representation of Laboratory Test Observables: Challenges and  
Perspectives in the SNOMED CT Observable Entity Model Adoption --  
Abstract -- 1 Introduction -- 2 Materials and Methods -- 2.1  
Terminologies and Ontologies -- 2.2 Lab Test Observable Classification  
-- 3 Results -- 3.1 ELK Classification Metrics -- 3.2 Lab Test  
Classification Issue -- 3.3 Representation of Observation Using BTL2 --  
4 Conclusion -- References -- CAREDas: Context and Activity  
Recognition Enabling Detection of Anomalous Situation -- 1  
Introduction -- 2 Related Work -- 2.1 Anomaly Detection -- 2.2  
Markov Logic Network (MLN) -- 3 Contributions -- 4 CAREDas  
Knowledge Base -- 4.1 Data Structure Definition -- 4.2 The MLN Model  
for Anomalous Situation Detection -- 5 CAREDas Inference Engine --  
5.1 Situation Construction -- 5.2 Dynamic Ground MLN Creation -- 5.3  
Rules Weights Calculus -- 5.4 Computation of the Weight of  
Probabilistic Hidden Predicates -- 6 Experimental Evaluation -- 7  
Conclusion and Future Work -- References.  
Using Constraint Logic Programming for the Verification of Customized  
Decision Models for Clinical Guidelines -- Abstract -- 1 Introduction --  
2 Related Work -- 2.1 Customization of CPGs -- 2.2 Automatic  
Verification and Evaluation of CIGs -- 3 Methods -- 3.1 Two-Layered  
Contextual Decision Model -- 3.2 Constraint Logic Programming and  
MiniZinc -- 3.3 Using CLP to Check Properties of Two-Layered Decision  
Models -- 3.4 Analysis of Property Violations and Revisions of the  
PROforma Model -- 4 Case Study Example -- 5 Results -- 5.1 A  
Decision Model for Asthma with the Secondary Personal Domains --  
5.2 Verification and Revision of the Decision Model for Asthma -- 6  
Discussion and Conclusions -- References -- Constructing Disease-  
Centric Knowledge Graphs: A Case Study for Depression (short Version)  
-- 1 Introduction -- 2 Challenges -- 3 Knowledge Resources and  
Integration -- 4 Use Cases -- 5 Implementation, Discussion and  
Conclusion -- References -- Bayesian Methods -- Implementing  
Guidelines for Causality Assessment of Adverse Drug Reaction Reports:  
A Bayesian Network Approach -- 1 Introduction -- 2 Materials and  
Methods -- 2.1 Bayesian Network Model Definition -- 2.2 Evaluation  
Strategy and Software Used -- 3 Results -- 4 Discussion -- 5  
Concluding Remarks -- References -- Bayesian Gaussian Process  
Classification from Event-Related Brain Potentials in Alzheimer's  
Disease -- Abstract -- 1 Introduction -- 2 Materials and Methods --  
2.1 Subjects -- 2.2 Assessment of Cognitive Decline and  
Apolipoprotein E Genotyping -- 2.3 Recording and Pre-processing of  
Event-Related Potentials -- 2.4 Spatial Synchrony Measures -- 2.5  
Spatiotemporal Synchrony Measures -- 2.6 Machine Learning  
Classifiers -- 3 Results -- 3.1 Prediction of Rapid Cognitive Decline --  
3.2 Apolipoprotein E 4 Classification -- 4 Summary and Discussion --  
Acknowledgment -- References.  
Data Fusion Approach for Learning Transcriptional Bayesian Networks  
-- Abstract -- 1 Introduction -- 2 Methods -- 2.1 Reconstruction of  
CML Transcriptional Regulatory Network -- 2.2 Hybrid Bayesian  
Network Structure Learning Algorithm -- 3 Results and Discussion --  
References -- A Prognostic Model of Glioblastoma Multiforme Using  
Survival Bayesian Networks -- 1 Introduction -- 2 Conditional Survival  
Bayesian Networks -- 2.1 Modelling Survival in Bayesian Networks --  
2.2 Learning and Inference -- 3 Experimental Work -- 3.1 Experimental  
Setup -- 3.2 Results -- 4 Conclusions -- References -- Accurate  
Bayesian Prediction of Cardiovascular-Related Mortality Using  
Ambulatory Blood Pressure Measurements -- 1 Introduction -- 2

Related Research -- 3 Experimental Methodology -- 4 Results -- 4.1 Bayesian Classification -- 5 Conclusion -- References -- Temporal Methods -- Modelling Time-Series of Glucose Measurements from Diabetes Patients Using Predictive Clustering Trees -- 1 Introduction -- 2 Predictive Clustering Trees for Time Series Modelling -- 3 Data Description and Experimental Design -- 4 Results -- 5 Conclusions -- References -- Estimation of Sleep Quality by Using Microstructure Profiles -- 1 Introduction -- 2 Data Set Description -- 3 Sleep Features -- 3.1 Hypnogram Features -- 3.2 PSM Based Sleep Features -- 4 Methodology -- 4.1 Feature Selection -- 5 Results and Discussion -- 6 Conclusion -- References -- Combining Multitask Learning and Short Time Series Analysis in Parkinson's Disease Patients Stratification -- 1 Introduction -- 2 Background and Motivation -- 3 The Parkinson's Disease Data Set -- 3.1 PPMI Symptoms Data Sets -- 3.2 PPMI Concomitant Medications Log -- 3.3 Experimental Data Set -- 4 Methodology -- 5 Data Analysis -- 5.1 Results -- 6 Conclusions -- References.

Change-Point Detection Method for Clinical Decision Support System Rule Monitoring -- 1 Introduction -- 2 Method -- 2.1 Data Transformation to Stabilize Variance -- 2.2 Seasonal-Trend Decomposition -- 2.3 Likelihood Ratio Statistics -- 2.4 Further Improvements -- 3 Experiments -- 3.1 Experiment Design -- 3.2 Results on Data with Known Change-Points -- 3.3 Results on Data with Simulated Change-Points -- 4 Related Work and Discussion -- 5 Conclusion -- References -- Discovering Discriminative and Interpretable Patterns for Surgical Motion Analysis -- 1 Introduction -- 2 Background -- 3 Method -- 3.1 Symbolic Aggregate Approximation (SAX) -- 3.2 Bag of Words Representation of Kinematic Data -- 3.3 Vector Space Model (VSM) -- 3.4 Training and Classifying Kinematic Data -- 4 Experimental Evaluation -- 4.1 Gesture Classification -- 4.2 Skills Classification -- 4.3 Interpretable Patterns Visualization -- 5 Conclusion -- References -- Natural Language Processing -- Automatic Classification of Radiological Reports for Clinical Care -- 1 Introduction -- 2 Background and Related Work -- 3 Data Representation and Annotation -- 3.1 Classification Schema -- 3.2 Data -- 4 Report Classification -- 4.1 Text Processing -- 4.2 Automatic Annotation -- 4.3 Classification -- 4.4 Machine Learning Algorithms -- 5 Evaluation and Discussion -- 6 Conclusion -- References -- Learning Concept-Driven Document Embeddings for Medical Information Search -- 1 Introduction -- 2 On the Semantic Gap Problem in Medical Search -- 3 Model -- 3.1 Problem Formulation -- 3.2 Learning the Concept-Based Representation of Documents -- 3.3 Solving the Optimization Problem -- 4 Experiments -- 4.1 Experimental Setup -- 4.2 Results -- 5 Conclusion and Future Work -- References -- Automatic Identification of Substance Abuse from Social History in Clinical Text -- Abstract -- 1 Introduction. 2 Related Work -- 3 Dataset -- 3.1 Annotation Process -- 3.2 Annotation Statistics -- 4 Methods -- 4.1 Step 1 - Identification of Sentences with Substance Abuse Events -- 4.2 Step 2 - Extraction of Entities for Substance Abuse Events -- 4.3 Step 3 - Event Template Creation -- 5 Results -- 5.1 Performance of Sentence and Entity Extraction Steps on the Training Set -- 5.2 Performance of the Event Extraction Pipeline on the Test Set -- 5.3 Error Analysis -- 6 Conclusion -- References -- Analyzing Perceived Intentions of Public Health-Related Communication on Twitter -- 1 Introduction -- 2 Related Work -- 3 Research Design -- 4 An Intention Taxonomy for Public Tweets -- 5 Discourse Features for Intention Discovery -- 6 Results and Discussion -- 7 Conclusion and Future Work -- References

-- Exploring IBM Watson to Extract Meaningful Information from the List of References of a Clinical Practice Guideline -- Abstract -- 1 Introduction -- 2 Methods -- 3 Results -- 4 Discussion and Conclusion -- References -- Recurrent Neural Network Architectures for Event Extraction from Italian Medical Reports -- Abstract -- 1 Introduction -- 2 Materials and Methods -- 2.1 Dataset -- 2.2 The Model -- 2.3 Evaluation Metrics -- 3 Results -- 4 Discussion and Conclusion -- References -- Numerical Eligibility Criteria in Clinical Protocols: Annotation, Automatic Detection and Interpretation -- 1 Introduction -- 2 Material -- 3 Methods -- 4 Results and Discussion -- 5 Conclusion and Future Work -- References -- Enhancing Speech-Based Depression Detection Through Gender Dependent Vowel-Level Formant Features -- 1 Introduction -- 2 Vowel-Level Formant Analysis -- 3 Classification Experiments -- 3.1 Set-Up -- 3.2 Results -- 4 Conclusions -- References -- A Co-occurrence Based MedDRA Terminology Generation: Some Preliminary Results -- 1 Introduction -- 2 Background and Related Work. 3 Methods and Experiments.

---

### Sommario/riassunto

This book constitutes the refereed proceedings of the 16th Conference on Artificial Intelligence in Medicine, AIME 2017, held in Vienna, Austria, in June 2017. The 21 revised full and 23 short papers presented were carefully reviewed and selected from 113 submissions. The papers are organized in the following topical sections: ontologies and knowledge representation; Bayesian methods; temporal methods; natural language processing; health care processes; and machine learning, and a section with demo papers. .

---