AIME17 PROGRAM

Time	21.6.	22.6.	23.6.	24.6.
	Main Lobby	*Main Lobby*	*Main Lobby*	*Main Lobby*
08:00-09:00	**Registration**	**Registration**	**Registration**	**Registration**
09:00-10:00	*Savoyen* / *Sachsen*			
10:00-11:00			**Main Conference**	
11:00-12:00	**Tutorial 1** / **Tutorial 3**	**Main Conference**		**WS 1+2** / **WS 3** / **WS 4**
12:00-13:00				
13:00-14:00	*Upper lobby* **Lunch**	*Upper lobby* **Lunch**	*Upper lobby* **Lunch**	*Upper lobby* **Lunch**
14:00-15:00	*Savoyen Sachsen* / *Montléart*	*Wilhelminen*	*Wilhelminen*	*Montléart Sachsen Rainer*
15:00-16:00			**Main Conference**	
16:00-17:00	**Tutorial 4** / **Tutorial 5** / **D/C**	**Main Conference**		**WS 1+2** / **WS 3** / **WS 4**
17:00-18:00				
18:00-19:00		**AIME Board Meeting** *Sachsen*	*Restaurant Schnattl (1080, Lange G. 40)*	
19:00-22:00	*Garden or Upper Lobby* **Welcoming Reception**		**Conference Dinner**	

21.06.2017

09:00 - 13:00   **Tutorial 1.** Ameen Abu-Hanna: *Evaluation of Prediction models in Medicine*

09:00 - 13:00   **Tutorial 2.** Bjorn Schuller, Bodgan Vlasenko and Hesam Sagha: *Latest speech & signal processing for affective and behavioral computing in mHealth*

09:00 - 13:00   **Tutorial 3.** Jeroen de Bruin and Klaus-Peter Adlassnig: *Clinical fuzzy control systems and fuzzy automata with HL7's clinical decision support standard: The Fuzzy Arden Syntax*

13:00 - 14:00   Lunch Break

14:00 - 18:00   **Tutorial 4.** Stéphane Meystre, Meliha Yetisgen, Scott DuVall and Hua Xu: *Natural Language Processing for Clinical Information Extraction*

14:00 - 18:00   **Tutorial 5.** Francisco Javier Diez and Manuel Luque: *Medical Decision Analysis with Probabilistic Graphical Models*

14:00 - 18:00   **Doctoral Consortium** (John Holmes)
sponsored by the AIJ Division of the IJCAI organization
(`http://www.ijcai.org/aijd`)

- **Naiara Muro Amuchastegui**: *Development of an advanced clinical decision support system: Enriching the guideline-based knowledge with experience*
  Vicomtech-IK4, Vicomtech-IK4, eHealth and Biomedical Applications, Donostia-San Sebastian, Spain; Biodonostia, Donostia-San Sebastian, Spain; Sorbonne Universités, UPMC, INSERM, LIMICS, Paris, France
  [Discussants: Lucia Sacchi and Mor Peleg]

- **Carmen M. Yago**: *Building probabilistic graphical models with Bayesian inference techniques*
  Department of Artificial Intelligence, Universidad Nacional de Educación a Distancia (UNED), Madrid, Spain
  [Discussants: Allan Tucker and Riccardo Bellazi]

- **Francesca Zerbato**: *Intertwining processes and data: Modeling the information perspective of knowledge-intensive healthcare processes*
  Department of Computer Science, University of Verona, Verona, Italy
  [Discussants: Yuval Shahar and Mor Peleg]

- **Lucas E. S. Oliveira**: *Summarization of clinical narratives from chronic-disease patients*
  Pontifícia Universidade Católica do Paraná, Curitiba, Paraná, Brasil
  [Discussants: Lucia Sacchi and Yuval Shahar]

- **Bernardo Cánovas-Segura**: *Multiuser Proactive Hybrid CDSS for Antibiotic Management in a Hospital Environment*
  Computer Science Faculty – Universidad de Murcia – Spain
  [Discussants: David Riaňo and Riccardo Bellazzi]

- **Mina Rezaei**: *Deep learning for medical image analysis*,
  Hasso Plattner Institute,Potsdam, Germany
  [Discussants: David Riaňo and Allan Tucker]

22.06.2017

09:00 - 09:15   **Opening Ceremony**
Annette ten Teije & Christian Popow

09:15 - 10:15   **Invited Talk 1**
Introduction: Lucia Sacchi
Stefan SCHULZ: *Annotating clinical narratives with SNOMED CT: The thorny way towards interoperability of clinical routine data*
[Sponsored by ECCAI]

10:15 - 10:40   **Session 1: Ontologies and Knowledge Representation**
Chair: Lucia Sacchi

Manuel Quesada-Martínez and Jesualdo Tomás Fernández-Breis: *Studying the reuse of content in biomedical ontologies: An axiom-based approach*

10:40 - 11:10   *Break*

11:10 - 12:30   **Session 1 ctd.: Ontologies and Knowledge Based Reasoning**
Chair: Mor Peleg

Melissa Mary, Lina F. Soualmia, Xavier Gansel, Karlsson Daniel and Schulz Stefan: Ontological Representation of Laboratory *Test Observables: Challenges and Perspectives in the SNOMED CT Observable Entity Model Adoption*

Hela Sfar, Nathan Ramoly, Amel Bouzeghoub and Béatrice Finance: *CAREDAS: Context and Activity Recognition Enabling Detection of Anomalous Situation*

Szymon Wilk, Adi Fux, Martin Michalowski, Mor Peleg and Pnina Soffer: *Using Constraint Logic Programming for the Verification of Customized Decision Models for Clinical Guidelines*

Zhisheng Huang, Jie Yang, Frank Van Harmelen and Qing Hu: *Constructing Disease-centric Knowledge Graphs: a case study for depression*[a]

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12:30 - 12:50   Demo papers
Chair: Milos Hausknecht

- Stéphane Meystre: *Semi-Automated Ontology Development and Management System Applied to Medically Unexplained Syndromes in the U.S. Veterans Population*
- Roberto Gatta: *pMineR: An Innovative R Library for Performing Process Mining in Medicine*
- Manuel Arias, Miguel A. Artaso, Iñigo Bermejo and Francisco J. Díez, Manuel Luque and Jorge Pérez-Martín: *Advanced algorithms for medical decision analysis. Implementation in OpenMarkov*
- Elisa Salvi: *A platform for targeting cost-utility analyses to specific populations*

12:50 - 14:15   *Lunch Break, Posters 1 & Demos*

13:00 - 14:00   AIIM Editorial Board Meeting

14:15 - 15:20   **Session 2: Bayesian Methods**
Chair: Riccardo Bellazzi

Pedro Pereira Rodrigues, Daniela Ferreira-Santos, Ana Silva, Jorge Polonia and Ines Ribeiro-Vaz: *Implementing guidelines for causality assessment of adverse drug reaction reports: a Bayesian network approach*

Wolfgang Fruehwirt, Pengfei Zhang, Matthias Gerstgrasser, Dieter Grossegger, Reinhold Schmidt, Thomas Benke, Peter Dal-Bianco, Gerhard Ransmayr, Leonard Weydemann, Heinrich Garn, Markus Waser, Michael Osborne and Georg Dorffner: *Bayesian Gaussian process classification from event-related brain potentials in Alzheimer's disease*

Elisabetta Sauta, Andrea Demartini, Francesca Vitali, Alberto Riva and Riccardo Bellazzi: *Data fusion approach for learning transcriptional Bayesian Networks*[a]

Simon Rabinowicz, Arjen Hommersom, Raphaela Butz and Matt Williams: *A Prognostic Model of Glioblastoma Multiforme using Survival Bayesian Networks*[a]

James O' Neill, Michael Madden and Eamon Dolan: *Accurate Bayesian Prediction of Cardiovascular-Related Mortality Using Ambulatory Blood Pressure Measurements*[a]

15:20 - 15:50   *Break & Posters 1*

15:50 -17:55   **Session 3: Temporal Methods**
Chair: Carlo Combi, Paolo Terenzini

Mate Beštek, Dragi Kocev, Sašo Džeroski, Andrej Brodnik and Rade Iljaž: *Modelling Time-series of Glucose Measurements from Diabetes Patients using Predictive Clustering Trees*

Zuzana Roštáková, Georg Dorffner, Önder Aydemir and Roman Rosipal: *Estimation of Sleep Quality by Using Microstructure Profiles*

Anita Valmarska, Dragana Miljkovic, Spiros Konitsiotis, Dimitris Gatsios, Nada Lavrač and Marko Robnik-Sikonja: *Combining multitask learning and short time series analysis in Parkinson's disease patients stratification*

Siqi Liu, Adam Wright and Milos Hauskrecht: *Change-Point Detection Method for Clinical Decision Support System Rule Monitoring*

Germain Forestier, Francois Petitjean, Pavel Senin, Fabien Despinoy and Pierre Jannin: *Discovering Discriminative and Interpretable Patterns for Surgical Motion Analysis*

18:00 - 19:00   **AIME Board Meeting**[b]

18:15 - 19:00   Tony Solomonides: *Discovery and optimization of diagnostic pathways* broadcasted live from the IEEE International Symposium on Computer-Based Medical Systems - IEEE CBMS 2017, Thessaloniki

19:00 - 22:00   **Welcoming Reception (at Conference Center)**

23.6.2017

09:00 - 10:00   **Invited Talk 2**
Introduction: John Holmes
Ken J. Barker: *Collaborative, Exploratory Question Answering against Medical Literature*
[Sponsored by ECCAI]

10:00 - 10:30   **Session 4: Natural Language Processing**
Chair: John Holmes

Alfonso Gerevini, Alberto Lavelli, Alessandro Maffi, Roberto Maroldi, Anne-Lyse Minard, Ivan Serina and Guido Squassina: *Automatic Classification of Radiological Reports for Clinical Care*

Elisa Salvi, Enea Parimbelli, Alessia Basadonne, Natalia Viani, Anna Cavallini, Giuseppe Micieli, Silvana Quaglini and Lucia Sacchi: *Exploring IBM Watson to extract meaningful information from the list of references of a clinical practice guideline*[a]

10:30 - 11:00   *Break*

11:00 - 12:35   **Session 4 ctd.: Natural Language Processing**
Chair: Pierre Zweigenbaum

Gia-Hung Nguyen, Lynda Tamine, Laure Soulier and Nathalie Bricon-Souf: *Learning concept-driven document embeddings for medical information search*

Meliha Yetisgen and Lucy Vanderwende: *Automatic Identification of Substance Abuse from Social History in Clinical Text*

Elena Viorica Epure, Camille Salinesi and Rebecca Deneckere: *Mining Perceived Intentions of the Public Health-Related Communication on Twitter*

Natalia Viani, Timothy Miller, Dmitriy Dligach, Steven Bethard, Carlo Napolitano, Silvia Priori, Riccardo Bellazzi, Lucia Sacchi and Guergana Savova: *Recurrent Neural Network Architectures for Event Extraction from Italian Medical Reports*[a]

Vincent Claveau, Lucas Emanuel Silva Oliveira, Guillaume Bouzillé, Marc Cuggia, Claudia Maria Cabral Moro and Natalia Grabar: *Numerical eligibility criteria in clinical protocols: annotation, automatic detection and interpretation*[a]

Nicholas Cummins, Bogdan Vlasenko, Hesam Sagha and Bjoern Schuller: *Enhancing speech-based depression detection through gender dependent vowel level formant features*[a]

Margherita Zorzi, Carlo Combi, Gabriele Pozzani, Elena Arzenton and Ugo Moretti: *A Co-occurence Based MedDRA Terminology Generation: Some Preliminary Results*[a]

12:35 - 14:00   *Lunch Break & Posters 2*

14:00 - 15:40   **Session 5: Healthcare processes**
Chair: Yuval Shahar

Carlo Combi, Barbara Oliboni and Francesca Zerbato: *Towards dynamic duration constraints for therapy and monitoring tasks*

Yann Dauxais, Thomas Guyet, David Gross-Amblard and André Happe: *Discriminant chronicles mining. Application to care pathways analytics*

Mor Peleg, Tiffany Leung, Manisha Desai and Michel Dumontier: *Is crowdsourcing patient-reported outcomes the future of evidence-based medicine? A case study of back pain*

Luca Canensi, Giorgio Leonardi, Stefania Montani and Paolo Terenziani: *Multi-level interactive medical process mining*[a]

Thomas Guyet, Andre Happe and Yann Dauxais: *Declarative sequential pattern mining of care pathways*[a]

Stefania Montani, Manuel Striani, Silvana Quaglini, Anna Cavallini and Giorgio Leonardi: *Knowledge-based trace abstraction for semantic process mining*[a]

Miquel Bofill, Marcos Calderón, Francesc Castro, Esteve Del Acebo, Pablo Delgado, Marc Garcia, Marta García, Marc Roig, María O. Valentín and Mateu Villaret: *The Spanish kidney exchange model: study of computation-based alternatives to the current procedure*[a]

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Yann Rivault, Nolwenn Le Meur and Olivier Dameron: *A Similarity Measure Based on Care Trajectories as Sequences of Sets*[a]

15:40-16:05   **Session 6: Machine Learning**
Chair: Gregor Štiglic

Andreas Karwath, Markus Hubrich and Stefan Kramer: *Convolutional Neural Networks for the Identification of Regions of Interests in PET Scans: A Study of Representation Learning for Diagnosing Alzheimer's Disease*[a]

Pedro Bibiloni, Manuel González-Hidalgo and Sebastià Massanet: *Skin Hair Removal in Dermoscopic Images using Soft Color Morphology*[a]

Michiel Meulendijk, Marco Spruit and Sjaak Brinkkemper: *Risk Mediation in Association Rules: The Case of Decision Support in Medication Review*[a]

Devendra Dhami, Ameet Soni, David Page and Sriraam Natarajan: *Identifying Parkinson's Patients : A Functional Gradient Boosting Approach*[a]

Cosima Prahm, Alexander Schulz, Benjamin Paaßen, Oskar Aszmann, Barbara Hammer and Georg Dorffner: *Echo State Networks as Novel Approach for Low-Cost Myoelectric Control*[a]

16:05 - 16:35   *Break & Posters 2*

16:35 - 17:50   **Session 6 ctd.: Machine Learning**
Chair: Niels Peek

Miriam Seoane Santos, Jastin Soares, Pedro Henriques Abreu, Helder Araújo and João Santos: *Influence of Data Distribution in Missing Data Imputation*

Yasunori Yamada and Masatomo Kobayashi: *Detecting Mental Fatigue from Eye-Tracking Data Gathered While Watching Video*

Joaquim De Moura, Jorge Novo, José Rouco, Manuel G. Penedo and Marcos Ortega: *Automatic identification of intraretinal cystoid regions in Optical Coherence Tomography*

18:00-18:20	**Awards and Closing Session** (Annette ten Teije, Christian Popow, and Szymon Wilk)
20:00-24:00	**Congress Dinner at Restaurant Schnattl**^{c}

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^{a} Short Paper, ^{b} Board Members, ^{c} see Voucher

24.6.2017

09:00 - 18:00 **Workshops**

Combined Workshop 1. & 2. David Riaño, Richard Lenz, Manfred Reichert, and Mor Peleg: *Joint International Workshop KR4HC 2017 - ProHealth 2017* and

Kerstin Denecke, Yihan Deng, Thierry Declerck and Frank van Harmelen: *Second Workshop on Extracting and Processing of Rich Semantics from Medical Texts*

Session I. Keynote
Frank van Harmelen: *How linked (open?) data can benefit healthcare systems*

Session II. Temporal Analysis, Representation, and Simulation

Luca Piovesan, Paolo Terenziani, and Daniele Theseider Dupré: *Temporal conformance analysis and explanation on comorbid patients*
Paolo Terenziani, Antonella Andolina: *Representing and reasoning with probabilistic temporal distances for guideline interaction analysis*

Guenter Tusch and Shahrzad Eslamian: *Utilizing temporal genomic data for healthcare*

Lilian Mie Mukai Cintho, Claudia Moro, Lucia Sacchi, and Silvana Quaglini: *Representation of temporal constraints in clinical guidelines using openEHR archetypes and GDL*

David Riaño, and José Ramón Alonso: *A knowledge-based conceptual model to simulate circulatory shock*

SessionIII. Modeling and Decision Support. Data Analysis

Szymon Wilk, Dympna O'Sullivan, Martin Michalowski, Silvia Bonaccio, Wojtek Michalowski, Mor Peleg, and Marc Carrier: *A data- and expert-driven decision support framework for helping patients adhere to therapy: Psychobehavioral targets and associated interventions*

A. Bottrighi, L. Piovesan, and P. Terenziani: *A general framework for the distributed management of exceptions and comorbidities*

Arturo González-Ferrer, María Ángel Valcárcel, Henar González-Luengo, and Enea Parimbelli: *A label taxonomy to support collaborative formalization of computer-interpretable guidelines and classification of modeling issues*

Roberto Gatta, Jacopo Lenkowicz, Mauro Vallati, Eric Rojas, Andrea Damiani, Carlos Fernandez-Llatas, Lucia Sacchi, Berardino De Bari, Arianna Dagliati, and Vincenzo Valentini: *Performance analysis of Markov chains-based models in process mining: A case study*

Christina Klüver and Christian Dahlmann: *A self-enforcing network for the analysis of fall cases in a University Hospital*

Session IV Natural Language Processing and Deep Learning

Yihan Deng, André Sander, Lukas Faulstich, and Kerstin Denecke: *Towards automatic clinical operation encoding (CHOP) with convolutional neural networks*

Salud María Jiménez-Zafra, M. Teresa Martín-Valdivia, M. Dolores, Molina-González, and L. Alfonso Ureña López: *Corpus annotation for aspect based sentiment analysis in medical domain*

Gerard van Oortmerssen, Stephan Raaijmakers, Maya Sappelli, Erik Boertjes, Suzan Verberne, Nicole Walasek, and Wessel Kraaij: *Analyzing cancer forum discussions with text mining*

Madeleine Kittner, Bariya Bajwa, Damian Rieke, Mario Lamping, Johannes Starlinger, and Ulf Leser: *Design of an information extraction pipeline for German clinical texts*

Workshop 3.

The Second Workshop on Artificial Intelligence for Diabetes

Organization: Beatriz López, Clare Martin and Pau Herrero Vinas
see also: `http://sots.brookes.ac.uk/~p0042050/aid2017/#schedule`

09:00 - 09:10   Introduction

09:10 - 10:00   Invited Speaker: M. Elena Hernando

10:00 - 10:15   Pau Herrero, Peter Pesl, Monika Reddy, Nick Oliver, and Pantelis Georgiou: *Automatic adjustment of basal insulin infusion rates in Type 1 Diabetes using run-to-run control and case-based reasoning*

10:15 - 10:30   Ferran Torrent-Fontbona, Beatriz Lopez, and Alejandro Pozo-Alonso: *A CBR-based bolus recommender system for type 1 diabetes*

10:30 - 11:00   *Break*

11:00 - 11:15   Arianna Dagliati, Lucia Sacchi, Valentina Tibollo, Giulia Cogni, Luca Chiovato, John H. Holmes, Riccardo Bellazzi: *T2DM phenotypes recognition by Careflow Mining*

11:15 - 11:30   Arianna Dagliati, Lucia Sacchi, Valentina Tibollo, Giulia Cogni, Luca Chiovato, Riccardo Bellazzi: *Drug purchases behavioral patterns to support clinical decisions in T2D patients*

11:30 - 11:45   Fabien Dubosson, Natalia Mordanyuk, Beatriz Lopez, Michael Schumacher: *Prediction of postprandial hypoglycemias from insulin intakes and carbohydrates: analysis and comparison between real and simulated datasets*

11:45 - 12:00   Aida Valls, Antonio Moreno, Domenec Puig, Emran Saleh, Jose Escorcia-Gutierrez, Jordina Torrents-Barrena, Pedro Romero-Aroca, Ramon Sagarra-Alamo, Sofia de la Riva-Fernandez: *A clinical decision support system for the diagnosis of Diabetic Retinopathy*

12:00 - 12:15   Daniel Brown, Claire Martin, D. Duce, Arantza Aldea, R. Harrison: *Towards a formal model of Type 1 Diabetes for Artificial Intelligence*

12:15 - 12:30   Mireya Munoz-Balbontin, Tjeerd V. olde Scheper, and Arantza Aldea: *Developing a Dynamic Bio-inspired Intelligent System to Support Diabetic Patients*

12:30 - 13:30   *Lunch Break*

13:30 - 14:30   Discussion: Demonstration and Requirements of an AID Repository

14:30 - 15:00   *Break*

15:00 - 16:00   Discussion about further collaborations and future editions of the workshop

16:00   *End of Workshop 3.*

Workshop 4.

Advanced predictive models in healthcare

Organization: Niels Peek, Gregor Štiglic, Nophar Geifman, Petra Povalej Brzan and Matthew Sperrin

Aljoša Vodopija, Miha Mlakar, Mitja Luštrek: *Predictive models to improve wellbeing of heart-failure patients*

Ivana Cace, John-Jules Meyer and Koen Böcker: *How to aggregate summary statistics to infer subgroup characteristics*

Peter Haddawy, Myat Su Yin, Tanawan Wisanrakkit, Rootrada Limsupavanich, Promporn Promrat and Saranath Lawpoolsri: *AIC-driven spatial hierarchical clustering: case study for Malaria prediction in Northern Thailand*

Awad Alyousef, Svetlana Nihtyanova, Chris Denton and Allan Tucker: *Nearest consensus clustering classification to identify subclasses of disease and predict disease*

Peter Haddawy, Myat Su Yin, Pongsatorn Chen, Thanaphon Kerdpholngam, Jedchayuth Surawatsatien and Saranath Lawpoo: *A Bayesian framework for integrating prediction and diagnosis - preliminary report*

Eitam Sheetrit, Nir Nissim, Denis Klimov, Lior Fuchs, Yuval Elovici, Yuval Shahar: *Temporal pattern discovery for accurate sepsis diagnosis in ICU patients*