Educational Data Mining 2010

3rd International Conference on Educational Data Mining
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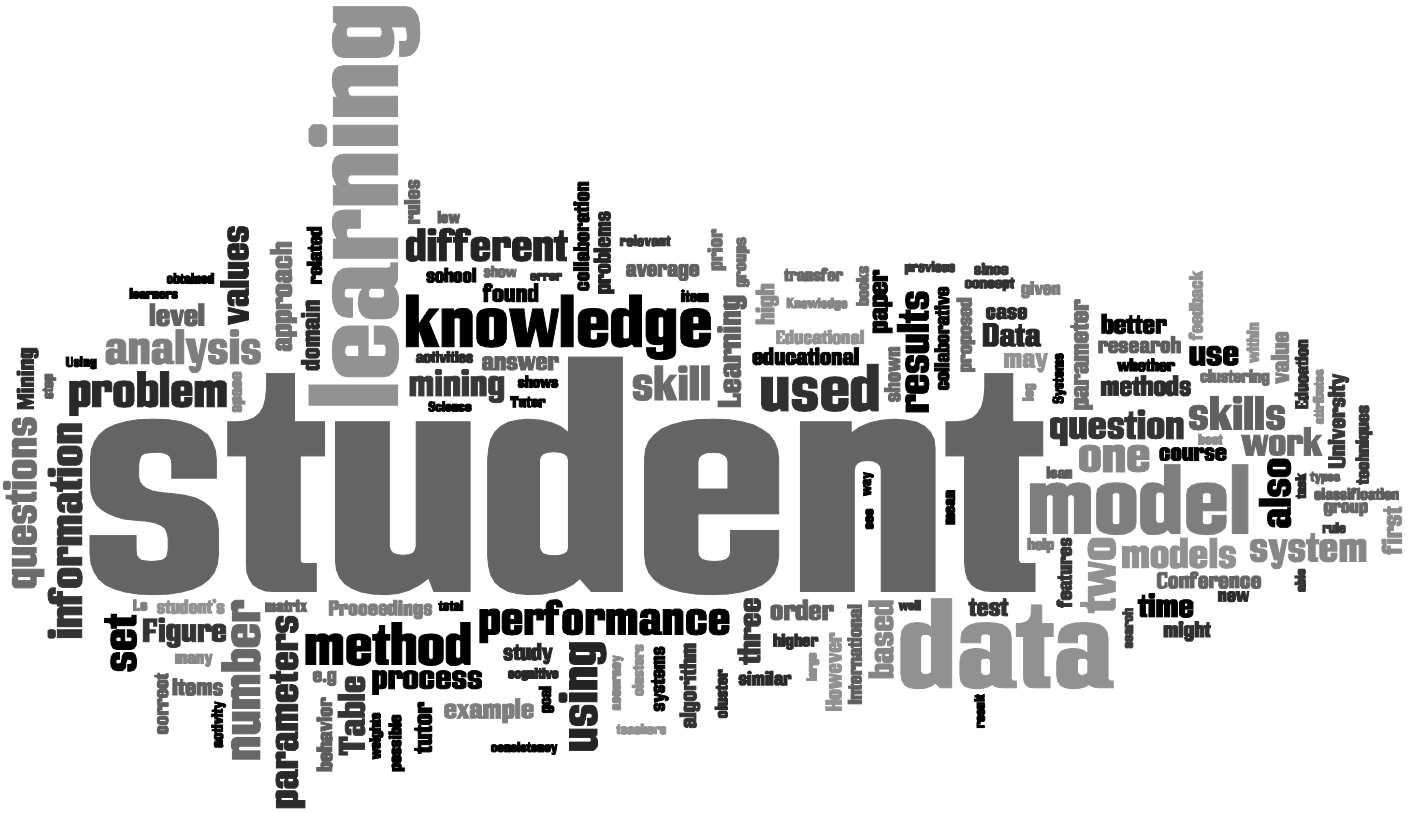

Ryan S.J.d. Baker,
Agathe Merceron,
Philip I. Pavlik Jr. (Eds.)

LearnLab
Pittsburgh Science of Learning Center

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Preface

The Third International Conference on Data Mining (EDM 2010) was held in Pittsburgh, PA,USA. It follows the second conference at the University of Cordoba, Spain, on July 1–3, 2009 and the first edition of the conference held in Montreal in 2008, and a series of workshops within the AAAI, AIED, EC-TEL, ICALT, ITS, and UM conferences. EDM2011 will be held in Eindhoven, Netherlands.

EDM brings together researchers from computer science, education, psychology, psychometrics, and statistics to analyze large data sets to answer educational research questions. The increase in instrumented educational software and databases of student test scores, has created large repositories of data reflecting how students learn. The EDM conference focuses on computational approaches for analyzing those data to address important educational questions. The broad collection of research disciplines ensures cross fertilization of ideas, with the central questions of educational research serving as a unifying focus.

We received a total of 54 full papers and 20 submitted posters from 21 countries. Paper submissions were reviewed by three or four reviewers and 23 of them were accepted as full papers (43% acceptance rate). All papers will appear both on the web, at www.educationaldatamining.org , as well as in the printed proceedings. The conference also included invited talks by Professor Cristina Conati , Computer Science Professor, Computer Science Department and Laboratory for Computational Intelligence at the University of British Columbia, Canada and by Professor Osmar Zaine Ph.D., Professor, Department of Computing Science, University of Alberta, Canada.

We would like to thank Carnegie Mellon University for their hosting of EDM2010, and thank the Pittsburgh Science of Learning Center DataShop and Carnegie Learning Inc for their generous sponsorship. We would like to thank the program committee members, local committee, web chair, the reviewers and the invited speakers for their enthusiastic help in putting this conference together.

Ryan S.J.d. Baker,
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Invited Speakers for Educational Data Mining 2010

Data-based Student Modeling in Exploratory Learning Environments

Cristina Conati
Computing Science Department & Laboratory for Computational Intelligence,University of British Columbia [homepage]

Abstract: Exploratory Learning Environments (ELE) are designed to help users acquire knowledge by freely experiencing a target domain. In this setting, it is often hard to identify interaction behaviours that are conducive to learning, vs. behaviours that indicate student confusion, making it hard to provide adaptive support to students who do not learn well with ELEs. In this talk, I will present our work on using data-based approaches to identify and recognize revelant behavioral patterns during interaction with ELEs, with the goal of enabling ELEs to monitor how a student works with the environment and provide adaptive support when needed.

Social Network Analysis for the Assessment of Learning

Osmar Zaiane
Department of Computing Science, University of Alberta[homepage]

Abstract: Using computer-supported collaborative learning tools, learners interact forming relationships and complex flows of information. In a forum with very few learners it is customary to quickly collect thousands of messages in few months, and these are interrelated in intricate discussion threads. Assessing the participation and interaction between learners can become a daunting task. Social network analysis is a field of study attempting to understand and measure relationships between entities in networked information. Can social network analysis techniques and data mining techniques for information networks help examine and assess online interactions? We examine some work done in this area, particularly the application of community mining, and discuss some open problems pertaining to social network analysis in the e-learning domain.

Table of Contents

Regular papers

Effort-based Tutoring: An Empirical Approach to Intelligent Tutoring -- Ivon Arroyo, Hasmik Mehranian and Beverly P. Woolf 1

An Analysis of the Differences in the Frequency of Students' Disengagement in Urban, Rural, and Suburban High Schools -- Ryan S.J.d. Baker and Sujith M. Gowda 11

On the Faithfulness of Simulated Student Performance Data -- Michel C. Desmarais and Ildiko Pelczer 21

Mining Bodily Patterns of Affective Experience during Learning -- Sidney D'Mello and Art Graesser 31

Can We Get Better Assessment From A Tutoring System Compared to Traditional Paper Testing? Can We Have Our Cake (Better Assessment) and Eat It too (Student Learning During the Test)? -- Mingyu Feng and Neil Heffernan 41

Using Neural Imaging and Cognitive Modeling to Infer Mental States while Using an Intelligent Tutoring System -- Jon M. Fincham, John R. Anderson, Shawn Betts and Jennifer Ferris 51

Using multiple Dirichlet distributions to improve parameter plausibility -- Yue Gong, Joseph E. Beck and Neil T. Heffernan 61

Examining Learner Control in a Structured Inquiry Cycle Using Process Mining -- Larry Howard, Julie Johnson and Carin Neitzel 71

Analysis of Productive Learning Behaviors in a Structured Inquiry Cycle Using Hidden Markov Models -- Hogyeong Jeong, Gautam Biswas, Julie Johnson and Larry Howard 81

Data Mining for Generating Hints in a Python Tutor -- Anna Katrina Dominguez, Kalina Yacef and James R. Curran 91

Off Topic Conversation in Expert Tutoring: Waste of Time or Learning Opportunity -- Blair Lehman, Whitney Cade and Andrew Olney 101

Sentiment Analysis in Student Experiences of Learning -- Sunghwan Mac Kim and Rafael A. Calvo 111

Online Curriculum Planning Behavior of Teachers -- Keith E. Maull, Manuel Gerardo Saldivar and Tamara Sumner 121

A Data Model to Ease Analysis and Mining of Educational Data -- André Krüger, Agathe Merceron and Benjamin Wolf 131

Identifying Students' Inquiry Planning Using Machine Learning -- Orlando Montalvo, Ryan S.J.d. Baker, Michael A. Sao Pedro, Adam Nakama and Janice D. Gobert 141

Skill Set Profile Clustering: The Empty K-Means Algorithm with Automatic Specification of Starting Cluster Centers -- Rebecca Nugent, Nema Dean and Elizabeth Ayers 151

Navigating the parameter space of Bayesian Knowledge Tracing models: Visualizations of the convergence of the Expectation Maximization algorithm -- Zachary Pardos and Neil Heffernan 161

Mining Rare Association Rules from e-Learning Data -- Cristóbal Romero, José Raúl Romero, Jose María Luna and Sebastián Ventura 171

Using Text Replay Tagging to Produce Detectors of Systematic Experimentation Behavior Patterns -- Michael Sao Pedro, Ryan S.J.d. Baker, Orlando Montalvo, Adam Nakama and Janice D. Gobert 181

Identifying High-Level Student Behavior Using Sequence-based Motif Discovery -- David H. Shanabrook, David G. Cooper, Beverly Park Woolf and Ivon Arroyo 191

Unsupervised Discovery of Student Strategies -- Benjamin Shih, Kenneth R. Koedinger and Richard Scheines 201

Assessing Reviewer's Performance Based on Mining Problem Localization in Peer-Review Data -- Wenting Xiong, Diane Litman and Christian Schunn 211

Using Numeric Optimization To Refine Semantic User Model Integration Of Adaptive Educational Systems -- Michael Yudelson, Peter Brusilovsky, Antonija Mitrovic and Moffat Mathews 221

Young Researcher Track papers

An Annotations Approach to Peer Tutoring -- John Champaign and Robin Cohen 231

Using Educational Data Mining Methods to Study the Impact of Virtual Classroom in E-Learning -- Mohammad Hassan Falakmasir and Jafar Habibi 241

Mining Students' Interaction Data from a System that Support Learning by Reflection -- Rajibussalim 249

Process Mining to Support Students' Collaborative Writing -- Vilaythong Southavilay, Kalina Yacef and Rafael A. Callvo 257

Poster Abstracts

Automatic Rating of User-Generated Math Solutions -- Turadg Aleahmad, Vincent Aleven and Robert Kraut 267

Tracking Students' Inquiry Paths through Student Transition Analysis -- Matt Bachmann, Janice Gobert and Joseph Beck 269

DISCUSS: Enabling Detailed Characterization of Tutorial Interactions Through Dialogue Annotation -- Lee Becker, Wayne H. Ward and Sarel vanVuuren 271

Data Mining of both Right and Wrong Answers from a Mathematics and a Science M/C Test given Collectively to 11,228 Students from India [1] in years 4, 6 and 8 -- James Bernauer and Jay Powell 273

Mining information from tutor data to improve pedagogical content knowledge -- Suchismita Srinivas, Muntaquim Bagadia and Anupriya Gupta 275

Clustering Student Learning Activity Data -- Haiyun Bian 277

Analyzing Learning Styles using Behavioral Indicators in Web based Learning Environments -- Nabila Bousbia, Jean-Marc Labat, Amar Balla and Issam Rebai 279

Using Topic Models to Bridge Coding Schemes of Differing Granularity -- Whitney L. Cade and Andrew Olney 281

A Distillation Approach to Refining Learning Objects -- John Champaign and Robin Cohen 283

A Preliminary Investigation of Hierarchical Hidden Markov Models for Tutorial Planning -- Kristy Elizabeth Boyer, Robert Phillips, Eun Young Ha, Michael D. Wallis, Mladen A. Vouk, and James C. Lester 285

Higher Contributions Correlate with Higher Learning Gains -- Carol Forsyth, Heather Butler, Arthur C. Graesser, Diane Halpern 287

Pinpointing Learning Moments; A finer grain P(J) model -- Adam Goldstein, Ryan S.J.d. Baker and Neil T. Heffernan 289

Predicting Task Completion from Rich but Scarce Data -- José P. González-Brenes and Jack Mostow 291

Hierarchical Structures of Content Items in LMS -- Sharon Hardof-Jaffe, Arnon Hershkovitz, Ronit Azran and Rafi Nachmias 293

Is Students' Activity in LMS Persistent? -- Arnon Hershkovitz and Rafi Nachmias 295

EDM Visualization Tool: Watching Students Learn -- Matthew M. Johnson and Tiffany Barnes 297

Inferring the Differential Student Model in a Probabilistic Domain Using Abduction inference in Bayesian networks -- Nabila Khodeir, Nayer Wanas, Nevin Darwish and Nadia Hegazy 299

Using LiMS (the Learner Interaction Monitoring System) to Track Online Learner Engagement and Evaluate Course Design -- Leah P. Macfadyen and Peter Sorenson 301

Observing Online Curriculum Planning Behavior of Teachers -- Keith E. Maull, Manuel Gerardo Saldivar and Tamara Sumner 303

When Data Exploration and Data Mining meet while Analysing Usage Data of a Course -- André Krüger, Agathe Merceron and Benjamin Wolf 305

AutoJoin: Generalizing an Example into an EDM query -- Jack Mostow and Bao Hong (Lucas) Tan 307

Conceptualizing Procedural Knowledge Targeted at Students with Different Skill Levels -- Martin Možina, Matej Guid, Aleksander Sadikov, Vida Groznik, Jana Krivec, and Ivan Bratko 309

Data Reduction Methods Applied to Understanding Complex Learning Hypotheses -- Philip I. Pavlik Jr. 311

Analysis of a causal modeling approach: a case study with an educational intervention -- Dovan Rai and Joseph E. Beck 313

Peer Production of Online Learning Resources: A Social Network Analysis -- Beijie Xu and Mimi M. Recker 315

Class Association Rules Mining from Students' Test Data -- Cristóbal Romero, Sebastián Ventura, Ekaterina Vasilyeva and Mykola Pechenizkiy 317

Modeling Learning Trajectories with Epistemic Network Analysis: A Simulation-based Investigation of a Novel Analytic Method for Epistemic Games -- Andre A. Rupp, Shauna J. Sweet and Younyoung Choi 319

Multiple Test Forms Construction based on Bees Algorithm -- Pokpong Songmuang and Maomi Ueno 321

Can Order of Access to Learning Resources Predict Success? -- Hema Soundranayagam and Kalina Yacef 323

A Data Driven Approach to the Discovery of Better Cognitive Models -- Kenneth R. Koedinger and John C. Stamper 325

Using a Bayesian Knowledge Base for Hint Selection on Domain Specific Problems -- John C. Stamper, Tiffany Barnes and Marvin Croy 327

A Review of Student Churn in the Light of Theories on Business Relationships -- Jaan Ubi and Innar Liiv 329

Towards EDM Framework for Personalization of Information Services in RPM Systems -- Ekaterina Vasilyeva, Mykola Pechenizkiy, Aleksandra Tesanovic, Evgeny Knutov, Sicco Verwer and Paul De Bra 331

A Case Study: Data Mining Applied to Student Enrollment -- César Vialardi, Jorge Chue, Alfredo Barrientos, Daniel Victoria, Jhonny Estrella, Juan Pablo Peche and Álvaro Ortigosa 333

Representing Student Performance with Partial Credit -- Yutao Wang, Neil T. Heffernan and Joseph E. Beck 335

Where in the World? Demographic Patterns in Access Data -- Mimi M. Recker, Beijie Xu, Sherry Hsi, and Christine Garrard 337

Pundit: Intelligent Recommender of Courses -- Ankit Ranka, Faisal Anwar, Hui Soo Chae 339

Author Index 341