

PREFACE

Educational data mining is the process of converting raw data from educational systems to useful information that can be used to inform design decisions and answer research questions. Data mining encompasses a wide range of research techniques that includes more traditional options such as database queries and simple automatic logging as well as more recent developments in machine learning and language technology. Educational data mining techniques are now being used in Intelligent Tutoring Systems (ITS) research worldwide. For example, researchers have used educational data mining to detect affect and disengagement, develop or refine student models, measure the effect of individual interventions, improved teaching support, predict student performance and behavior.

However, these techniques could achieve greater use and bring wider benefits to the ITS community. We need to develop standard data formats, so that researchers can more easily share data and conduct meta-analysis across tutoring systems. We need to determine which data mining techniques are most appropriate for the specific features of educational data, and how these techniques can be used on a wide scale. This workshop provides a forum to present preliminary but promising results that can advance our knowledge of how to appropriately conduct educational data mining and extend the field in new directions.

Interest in this topic is rising quickly. This is evidenced by the increasing number of papers and workshops on this topic at the American Association for Artificial Intelligence conferences (AAAI), the Artificial Intelligence in Education conference (AIED) and Intelligent Tutoring Systems conferences (ITS). This year, explicit links will be made between this Educational Data Mining workshop, and our sister workshop on the same topic at AAAI'2006 (see <http://www.aaai.org/Workshops/ws06workshops.php#ws06>), with a session at each workshop on the trends and ideas from the other workshop.

Recently, a forum for collaboration on Educational Data Mining was created at <http://educationaldatamining.org>. This research network should provide opportunities for better collaboration between researchers who already think of themselves as working in this area, and help to reach out to the broader community of scientists who mine educational data.

Contributions

Nine papers were submitted to the Educational Data Mining Workshop; the six papers that were eventually accepted include work on the full spectrum of potential settings for Educational Data Mining, from Intelligent Tutoring Systems to collaborative environments and university outcome measures. In addition, a wide variety of important issues are addressed, including modelling formalisms, data collection, and the combination of human judgment with machine learning.

We believe that these papers will stimulate discussion at the Educational Data Mining Workshop at the 2006 Intelligent Tutoring Systems Conference in Jonghli, Taiwan.

Acknowledgements

We thank the members of the program committee for all their help and support, and in particular thank Joe Beck for his leadership in this area and collaboration with us in integrating the growing research community which this workshop and the workshop at AAAI'2006 serve.

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