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Preface

The European Societies for Artificial Intelligence in Medicine (AIME) and Medical Decision Making (ESMDM) were both established in 1986. A major activity of both these societies has been a series of international conferences, held biennially over the last 13 years. In the year 1999 the two societies organized a joint conference for the first time. It took place from June 20–24th, 1999 in Aalborg, Denmark.

This “Joint European Conference on Artificial Intelligence in Medicine and Medical Decision Making (AIMDM’99)” was the seventh conference for each of the two societies. This conference follows the AIME conferences held in Marseilles (1987), London (1989), Maastricht (1991), Munich (1993), Pavia (1995), and Grenoble (1997). Previous ESMDM conferences have been held in Leiden (1986), Copenhagen (1988), Glasgow (1990), Marburg (1992), Lille (1994), and Torino (1996).

The AIMDM conference is the major forum for the presentation and discussion of new ideas in the areas of Artificial Intelligence and Medical Decision Making in Medicine. This fulfills the aims of both societies. The aims of AIME are to foster fundamental and applied research in the application of Artificial Intelligence (AI) techniques to medical care and medical research, and to provide a forum for reporting significant results achieved. ESMDM’s aims are to promote research and training in medical decision-making, and to provide a forum for circulating ideas and programs of related interest.

In the AIMDM’99 conference announcement, authors were encouraged to submit original contributions to the development of theory, techniques, and applications of both AI in medicine (AIM) and medical decision making (MDM). Contributions to theory could include presentation or analysis of the properties of novel AI or MDM methodologies potentially useful in solving medical problems. Papers on techniques should describe the development or the extension of AIM or MDM methods and their implementation. They should also discuss the assumptions and limitations which characterize the proposed methods. Application papers should describe the implementation of AI or MDM systems in solving significant medical problems, including health care quality assurance, health care costs, and ethical considerations. Application papers should present sufficient information to allow evaluation of the practical benefits of the system.

The call for papers for AIMDM’99 resulted in 90 submissions. Following the traditional format for AIME and ESMDM conferences there were two styles of submission: full papers and abstracts. We received 57 full paper submissions (55 for AIM areas, 2 for MDM areas), and 33 abstract submissions (14 for AIM areas, 19 for MDM areas). Looking at the research areas on which the submitted papers focused, we note that AIMDM was able to maintain its wide scope both in methodology and application compared to the previous conferences. Fur-

ther, submissions from 23 countries from all the 5 continents make evident that AIMDM is not limited geographically.

Each submission was evaluated carefully by two members of the program committee with support from additional reviewers. The reviews judged the relevance, originality, quality of research, presentation, and the overall impact of the work. As a result 42 submissions were accepted for oral presentation and 32 submissions were accepted for poster presentation. The proceedings volume contains all accepted full paper submissions: 27 full papers (those 47% of full papers accepted for oral presentation) and 19 short papers (the 33% of full papers accepted for poster presentation appearing in a shortened version). In addition, this volume contains extensive analysis papers in four keynote areas of research written by the invited conference speakers: clinical practice guidelines, workflow management systems in health care, temporal reasoning and temporal data maintenance, and machine learning approaches used in mining of medical data.

The high quality of research and application papers in this volume strengthen our belief, that the “Artificial Intelligence in Medicine” series is a worthwhile addition to the literature. This is the seventh volume of a series of AIME proceedings with steadily improving quality. This book continues the dissemination of important results from research and development in the fields of artificial intelligence in medicine and medical decision making.

We would like to thank all those people and institutions who contributed to the success of AIMDM’99: the authors, the members of the program committee and the additional reviewers, the members of the local organizing committee, and the invited speakers Nada Lavrač, Gianpaolo Molino, Yuval Shahar, and Mario Stefanelli. Further, we would like to thank the organizers of the two workshops accompanying the technical conference: Ameen Abu-Hanna, Peter Lucas, and Silvia Miksch, and the presenters of the tutorials: Steen Andreassen, Robert Hamm, Claire Harries, Finn V. Jensen, Nada Lavrač, Leonard Leibovici, Joseph Pliskin, Ehud Reiter, Karla Soares Weiser, and Blaž Zupan. Finally, we would like to thank the institutions which sponsored the conference, namely the Aalborg University (Department of Medical Informatics and Image Analysis), the Austrian Research Institute for Artificial Intelligence, the University of Vienna (Department of Medical Cybernetics and Artificial Intelligence), and the Det Obelske Familiefond.

March 1999

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