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Preface

For the past 14 years, the MODELS conference has been the premier venue for the exchange of innovative ideas and experiences of model-based approaches in the development of complex systems. MODELS is universally recognized as one of the top conferences in software engineering research and is a highly selective conference, with an acceptance rate averaging 20% in recent years. The conference series covers all aspects of model-based development for software and systems engineering, including modeling languages, methods, tools, and their applications.

Research in software and system modeling is now a relatively mature field. Like any mature field, however, it can be a good idea to encourage fresh thinking. Whilst not wishing to reduce the importance of solid incremental research, the conference this year asked participants to think ahead to what modeling would be like a decade hence. For this reason, the Program Chairs selected *Modeling in 2020* as the theme for MODELS 2011. The theme was chosen to encourage new perspectives about the future role of modeling in complex systems engineering. As part of this effort, the conference solicited, for the first time, a new category of research papers—vision papers—that presented "outside the box" thinking. This category was introduced to encourage the submission of papers with new ideas that would take the community beyond its normal boundaries.

As part of the effort to encourage fresh perspectives, the conference invited three outstanding keynote speakers this year, two of which were from outside the software modeling domain.

Marian Petre is a Professor of Computing at the Open University in the UK. She is well known for her work considering software from a 'design studies' perspective and describes her role to 'pick the brains of experts' in studying how leading professional software developers reason about, represent, and communicate designs. Marian's keynote reported on insights from many years of empirical studies of expert software designers.

The conference welcomed its first ever Academy Award winning speaker this year. Mark Sagar is Special Projects Supervisor at Weta Digital. He has developed technologies for interactive applications and for feature films and has won two consecutive Scientific & Engineering Academy Awards for his pioneering work in facial motion capture and realistic relighting of computer generated faces. He has specialized in bringing computer generated faces to life in some of Hollywood's biggest blockbusters including "Avatar" and "King Kong". Mark's fascinating talk focused on creating models for simulating the face.

MODELS was also very lucky to welcome Wolfram Schulte as a keynote speaker. Wolfram is a principal researcher and the founding manager of Microsoft's Research in Software Engineering (RiSE) team in Redmond,

Washington. In his talk, Wolfram presented Formula, a new formal specification language and toolset for describing, transforming and analyzing meta-models and instance models.

MODELS 2011 continued its strong tradition of soliciting both research-oriented papers (the Foundations Track) and practice-oriented papers (the Applications Track). The Foundations Track received 167 full paper submissions, of which 34 were finally selected for presentation by the program committee, giving an acceptance rate of 20%. Out of these, 3 papers were vision papers, selected out of a total of 20 vision paper submissions (15% acceptance rate). The Applications Track was particularly healthy this year: the program committee chose 13 out of 27 paper submissions (48% acceptance rate). In addition, two papers that were originally submitted to the Foundations Track were transferred and accepted into the Applications Track.

The Program Chairs would like to thank all those who submitted papers, as well as those who submitted proposals for workshops and tutorials. We would also like to express our gratitude to the many volunteers who contributed to the success of the conference, including organizers of the Educators' Symposium and Doctoral Symposium. Special thanks are due to Richard van de Stadt for his support of CyberChairPRO, the conference management system used for MODELS 2011. We thank our sponsors, ACM and IEEE, and host, the Victoria University of Wellington. Last, but certainly not least, we give special thanks to the Program Committee and other external reviewers for all their hard work in reviewing and discussing papers.

October 2011

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