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Preface

We are particularly pleased to present this volume containing the collected work prepared for and presented at the Canadian AI 2020 conference, the 33rd Canadian Conference on Artificial Intelligence, held during May 13–15, 2020. The Canadian AI conference is one of the longest running AI conferences, running first biennially from 1976 to 2000, then annually ever since. This volume continues to show the thriving vitality and leadership of the Artificial Intelligence (AI) scene in Canada. The 2020 conference was supposed to take place in Ottawa, where Canadian AI had taken place roughly every 10 years (1990, 2001, and 2010). However, the spread of Covid-19 had a massive impact on conferences throughout the world in the spring and summer of 2020, and the Canadian AI conference was moved to a virtual, fully online format.

We received 145 submissions to the main conference, the highest number for a Canadian AI conference since at least 2008. Most submissions were reviewed by three Program Committee members, although a few got only two, or up to five reviews. Based on the recommendations of the Program Committee, 31 submissions were accepted as long papers (12 pages), and an additional 24 submissions were accepted as short papers (6 pages). The selected papers cover a wide range of topics, including machine learning, pattern recognition, natural language processing, knowledge representation, cognitive aspects of AI, ethics of AI, and other important aspects of AI research. They reflect some of the most recent and trending topics such as adversarial learning and reinforcement learning, as well as applications of AI to various problems in healthcare, social media and network analysis, affective computing, anomaly detection, or processing of sensor data. In addition, the Graduate Student Symposium, co-chaired by Pooya Moradian Zadeh and James Wright, ran its own selection process. From 30 submissions, they selected 8 for oral presentations, 4 of which are included at the end of this volume. In addition, David Nadeau from Innodata Labs organized an Industry Session on the topic “Industrial AI: A day in the life of an AI practitioner.” We thank David, James, and Pooya for organizing these sessions and selecting the relevant contributions.

The contributions selected for this volume owe much to the work of the Program Committee and additional reviewers, who volunteered their time and worked dutifully to complete their reviews (mostly) on time, and provided additional feedback during the discussion to inform the final acceptance decisions. The conference would of course not exist without the contributions provided by the 385 authors and co-authors who submitted their work. We also thank the authors of the accepted papers for their efforts finalizing the camera-ready version of their papers and preparing their online presentations.

Three keynotes enriched the program of the conference, given by leading figures from the field: Giuseppe Carenini from the University of British Columbia, Csaba Szepesvári from the University of Alberta, and Pascal Poupart from the University of Waterloo. The conference also included a tutorial on “Reinforcement Learning” by

Pierre-Luc Bacon from Université de Montréal. We thank Pierre-Luc, Pascal, Csaba, and Giuseppe for volunteering their time and for their contribution to the program of the conference.

Canadian AI is sponsored by the Canadian Artificial Intelligence Association (CAIAC). We gratefully acknowledge the support of the Executive Committee of CAIAC: Leila Kosseim, Xin Wang, Richard Khoury, Denilson Barbosa, and Ziad Kobti. We also thank Fabrizio Gotti, who did a wonderful job designing and maintaining the conference website. Canadian AI was colocated with the 17th Conference on Computer and Robot Vision (CRV 2020). We wish to acknowledge the many constructive discussions we had with the CRV co-chairs Liam Paul and Michael S. Brown, as well as Michael Jenkin and Steven Waslander from the Canadian Information Processing and Pattern Recognition Society, while preparing the move to a virtual conference. Last but not least, we are extremely grateful to the general chairs of AI-CRV 2020, Marina Sokolova and Chris Drummond, for their help with planning and organization before and after the move to virtual conferences.

Finally we thank the sponsors who provided and maintained their financial support through the tribulations of this complicated season: Carleton University, The University of Ottawa (Office of Vice-President Research, Faculty of Medicine and Faculty of Engineering), Huawei, Innodata, Compusult, and Tenera Care.

March 2020

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