Preface

The EPIA Conference on Artificial Intelligence came back to Porto. EPIA's first edition, in 1985, followed by the 1993 and 2001 editions, already took place in this unique city.

Today, AI is experiencing a new age of social recognition as well as increasing ethical responsibility, which makes this event, in 2017, even more attractive and challenging.

The main goal of the EPIA conferences has always been to foster research, scientific knowledge exchange, and new insights in the AI scientific area. This is achieved through judicious presentations and critical discussions on selected topics by, among others, researchers, practitioners, scientists, and engineers.

The 18th EPIA Conference on Artificial Intelligence (EPIA 2017) took place at the Faculty of Engineering of the University of Porto during September 5–8 (www.fe.up.pt/epia2017/).

This edition included several novelties. First, it was mandatory to include international AI community researchers, from different countries, in each track's Organizing Committee.

The international flavor of this EPIA edition was confirmed by the origin of the Program Committee (PC) members, coming from 42 different countries, and accepted paper authors, who belong to 17 different countries (Argentina, Austria, Brazil, Finland, France, Germany, Italy, The Netherlands, New Zealand, Poland, Portugal, Russia, South Africa, Spain, Turkey, USA, Ukraine).

Secondly, we promoted a journal special issue for papers specifically submitted to the journal (*New Generation Computing*, Special Issue on "Computational Models for Social and Technical Interactions"). The accepted papers were also presented orally during the conference.

EPIA 2017 encompassed a record of 16 tracks devoted to different topics, plus a doctoral symposium and a panel session on "Beneficial AI." The selected tracks are: ABM4Crime – Agent-Based Modelling for Criminological Research, AICPDES – Artificial Intelligence in Cyber-Physical and Distributed Embedded Systems, AIG – Artificial Intelligence in Games, AIM – Artificial Intelligence in Medicine, AIPES – Artificial Intelligence in Power and Energy Systems, AITS – Artificial Intelligence in Transportation Systems, ALEA – Artificial Life and Evolutionary Algorithms, AmIA – Ambient Intelligence and Affective Environments, BAAI – Business Applications of Artificial Intelligence, IROBOT – Intelligent Robotics, KDBI – Knowledge Discovery and Business Intelligence, KRR – Knowledge Representation and Reasoning, MASTA – Multi-Agent Systems: Theory and Applications, SE4AIS – Software Engineering for Autonomous and Intelligent Systems, SSM – Social Simulation and Modelling, TeMA – Text Mining and Applications.

The invited speakers at EPIA 2017 were Francesco Bonchi, Research Leader at the ISI Foundation, Turin, Italy, with a talk on "Data Science"; Simon M. Lucas, from the

School of Computer Science and Electronic Engineering, University of Essex, with a talk on "AI and Games"; and Philipp Slusallek, from the German Research Center for Artificial Intelligence (DFKI), Germany, with a talk on "Agents and Simulated Reality".

There were 177 paper submissions to the thematic tracks, plus another 20 to the special session on "Business Applications of Artificial Intelligence" open to students and industry and to the doctoral symposium. The 18th EPIA also accommodated two AI-related competitions (Geometric Friends Game AI Competition and Discovery Challenge).

The papers acceptance rate was circa 38% which means that 71 (almost all full papers) out of 177 papers are published in these proceedings, plus six out of 26 in the journal special issue.

All the papers were carefully revised and the track organizing chairs, together with their respective Program Committee members, have to be praised for their hard work on scientific reviewing.

Thanks are also due to the supporting organizations (University of Porto, Faculty of Engineering of the University of Porto and Informatics Engineering Department) and, finally, the conference sponsors, starting with SISCOG, our main sponsor to whom we sincerely address our thanks, but also ShelfAI, MASDIMA, LTP, and DevScope. Our colleagues of the Organizing Committee, Ana Paula Rocha and Goreti Marreiros, were also crucial for the successful realization of EPIA 2017.

Thank you all.

June 2017   Eugénio Oliveira
                                                                                    Henrique Lopes Cardoso
                                                                                                      João Gama
                                                                                                      Zita Vale