Preface

The First International "AAI4H – Advances in Artificial Intelligence for Healthcare" Workshop was held in conjunction with the 24th European Conference on Artificial Intelligence (ECAI), Virtual Conference, on September 4, 2020. The workshop comprises papers from the International "HELPLINE – Artificial Intelligence for HEaLth, PersonaLized MedIcine aNd WEllbeing" workshop and papers from the "SP4HC – Singular Problems for Healthcare" Workshop.

AAI4H was conceived to provide a new venue in the field cross-cutting information management and medical informatics to discuss innovative data management and analytics technologies highlighting end-to-end applications, systems, and methods to address problems in healthcare, public health, and everyday wellness, with clinical, physiological, imaging, behavioral, environmental, and omic data, and data from social media and the Web. A major goal was devoted to advances in Artificial Intelligence applied to Healthcare and Well-Being, with an active interest in frontier-of-knowledge Machine Learning subjects. Namely the so-called singular problems: In particular, imbalanced classification, which is pervasive in important practical problems in healthcare.

Artificial intelligence and machine learning are changing the landscape of healthcare and modern personalized precision medicine. The increasing availability of health data together with the rapid progress of machine learning algorithms and analysis techniques, are gradually enabling doctors for better diagnosis, improve disease surveillance, facilitating early disease detection, uncovering novel treatments and drug-interaction, detect false alarms and over-diagnosis, and creating an era of truly personalized medicine. A great challenge is build better modeling tools for integrating human expertise and artificial intelligence techniques to exploit big data in healthcare, and formulate hypothesis about how the human organisms act in health and illness. A major goal of this workshop was to discuss theoretical as well as application-oriented research studies on relevant topics in the realm of healthcare and health informatics along with applications to real life situations.

The programme of the first edition of the AAI4H Workshop included oral presentations of 18 papers accepted at the end of a peer-reviewed process. Out of these, 14 are included in this volume. We would like to thank all the contributing speakers, the members of our Program Committee for timely providing their reviews despite the difficulties arisen in these times of Covid-19 global emergency, and, last but not least, the ECAI-2020 Workshops chairs, Magdalena Ortiz and Amparo Alonso, for their trust and support.

September 2020,

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Workshop Websites

Further information can be found at:

- *http://events.dimes.unical.it/helpline/.*
- *http://www.smarttechresearch.com/SP4HC2020/.*