FOREWORD

To deliver better healthcare to patients and advance healthcare solutions as well as to increase the efficiency of the manufacturing process and thus reduce material and energy consumption in production, more and more artificial intelligence (AI) methods are applied in the field of both, Medicine and Manufacturing. Some of the exciting applications in these areas are remote patient treatment, transcription and storage of digitalized medical data, new drug development, support tools for fastened disease diagnosis, visual quality control in production processes, intelligent supply chain, and logistics solutions, and machine parameter optimization. The applications of artificial intelligence are manifold and therefore, many experts call AI a disruptive and cross-sectional technology. In general, AI is mainly used to optimize internal processes or to develop new business models. However, AI for Medicine and Manufacturing faces obstacles such as a shortage of high-dimensional data, privacy concerns regarding the data collected, and the risks of the creation of biased algorithms if data are not collected over a representative population. The articles presented in this conference proceedings report are selected from the oral presentations and poster presentations from the conference held on 19 October 2022 at the University Furtwangen, Campus Schwenningen, and assigned to the chapters MANUFACTURING, MACHINE LEARNING, and MEDICAL TECHNOLOGY.

The URAI 2022 is the fourth conference on artificial intelligence organized by the tri-national alliance TriRhenaTech, the alliance of universities of applied sciences in the Upper Rhine region. Starting in 2019 in Offenburg, the TriRhenaTech universities have been cooperating on AI for many years. 2021 the conference was held at Hochschule Kaiserslautern and the focus was on applications of AI in life sciences. This year, 2022, the conference moved to Hochschule Furtwangen. The conference's focus on AI in Manufacturing and Medicine was chosen to emphasize the role and the strength of Manufacturing and Medicine in and for our region.

Prof. Dr. Christoph Reich
Institute of Data Science,
Cloud Computing, and IT Security
Furtwangen University

Prof. Dr. Ulrich Mescheder
Vice-President Research and Transfer
Furtwangen University