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Preface

Welcome to the proceedings of the 28th International Conference on Neural Information Processing (ICONIP 2021) of the Asia-Pacific Neural Network Society (APNNS), held virtually from Indonesia during December 8–12, 2021.

The mission of the Asia-Pacific Neural Network Society is to promote active interactions among researchers, scientists, and industry professionals who are working in neural networks and related fields in the Asia-Pacific region. APNNS has Governing Board Members from 13 countries/regions – Australia, China, Hong Kong, India, Japan, Malaysia, New Zealand, Singapore, South Korea, Qatar, Taiwan, Thailand, and Turkey. The society’s flagship annual conference is the International Conference of Neural Information Processing (ICONIP).

The ICONIP conference aims to provide a leading international forum for researchers, scientists, and industry professionals who are working in neuroscience, neural networks, deep learning, and related fields to share their new ideas, progress, and achievements. Due to the current COVID-19 pandemic, ICONIP 2021, which was planned to be held in Bali, Indonesia, was organized as a fully virtual conference.

The proceedings of ICONIP 2021 consists of a four-volume set, LNCS 13108–13111, which includes 226 papers selected from 1093 submissions, representing an acceptance rate of 20.86% and reflecting the increasingly high quality of research in neural networks and related areas in the Asia-Pacific. The conference had four main themes, i.e., “Theory and Algorithms,” “Cognitive Neurosciences,” “Human Centred Computing,” and “Applications.”

The four volumes are organized in topical sections which comprise the four main themes mentioned previously and the topics covered in three special sessions. Another topic is from a workshop on Artificial Intelligence and Cyber Security which was held in conjunction with ICONIP 2021. Thus, in total, eight different topics were accommodated at the conference. The topics were also the names of the 20-minute presentation sessions at ICONIP 2021. The eight topics in the conference were: Theory and Algorithms; Cognitive Neurosciences; Human Centred Computing; Applications; Artificial Intelligence and Cybersecurity; Advances in Deep and Shallow Machine Learning Algorithms for Biomedical Data and Imaging; Reliable, Robust, and Secure Machine Learning Algorithms; and Theory and Applications of Natural Computing Paradigms.

Our great appreciation goes to the Program Committee members and the reviewers who devoted their time and effort to our rigorous peer-review process. Their insightful reviews and timely feedback ensured the high quality of the papers accepted for

publication. Finally, thank you to all the authors of papers, presenters, and participants at the conference. Your support and engagement made it all worthwhile.

December 2021

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