INTRODUCTION TO THE ISSUE

PERSPECTIVES MAGAZINE

Welcome to the fifth issue of *Perspectives* magazine! I hope you are comfortably installed in a quiet place at the 25th FUSION conference in Linköping, in Sweden. Let me first welcome two new members to the *Perspectives* Editorial team: Paulo Costa accepted the role of Associate Editor (AE) for the area of Higher Level Information Fusion, and Kristy Virostek of Conference Catalysts is back in her role of Production Manager (PM) that she could not afford last year. It is a real pleasure to have them on board.

After two years of pandemic, the FUSION conference is back to a full physical format in Europe, for the second time in Sweden, after the 2004 edition in Stockholm. This fifth issue of *Perspectives* is thus an opportunity to look back and look forward.

Looking back, the Information Fusion History department reviews the long path of construction of the Fusion community, through the lens of its flagship events that have been held yearly on the five continents at the International Conference of Information Fusion. In a seminal paper, chairs of the 24 conferences since 1998 dig into their memories to tell their stories about the event's organization, with concluding remarks from the FUSION 2022 general cochairs. I am extremely grateful for their generosity in sharing the invaluable fond memories that explain the genesis of the Fusion community. I would like to thank them for taking time to write these words and find photos (special thank you to Jean Dezert), where smiles give life to stories and allow us to remember those who left us. Let me finally thank Chee-Yee Chong, one of the few attendees of every conference, for providing the introduction of this paper, as well as precious advice and precise memories.

Still looking back, the first feature paper is provided by a Swedish team of authors from the Swedish Defence Research Agency (FOI), the University of Skövde (HIS), the Integrated Transport Research Lab (ITRL/KTH), and Linköping University. In their paper "On the Definition and Scope of Information Fusion as a Field of Research", the authors Ronnie Johansson, Alexander Karlsson, Sten F. Andler, Marcus Brohede, Maria Klingegård, Joeri van Laere, and Tom Ziemke walk us through the different definitions of Information Fusion, and pave the way to future research on connected topics.

Looking back is necessary to build the future. Formalization from quantum theory has proven in the last years to be useful in many fields and Information Fusion makes no exception, as reflected in this issue of *Perspectives*. Wolfgang Koch in his paper "Quantum Algorithms for Data Fusion: Trends and Ap-

plications" presents some ongoing work within his team at Fraunhofer FKIE, highlighting the potential of quantum algorithms for solving tracking problems, with perspectives for resources management. Kathryn Blackmond Laskey from George Mason University (GMU) analyzes herself how quantum models can support a theory of free will for agents, in her paper, "Agents with Free Will: A Theory Grounded in Quantum Physics".

The issue also includes a report on the 2021 FUSION conference, the first held on the African continent. After a (forced) virtual event in 2020, the general cochairs Pieter de Villiers (University of Pretoria), Alta de Waal (University of Pretoria), and Fredrik Gustafsson (Linköping University) hosted attendees at the Sun City facilities in South Africa, offering them the unique chance of seeing the "big five" animals. The FUSION 2021 Best Paper and Best Student Paper awards are presented by the conference award chair Nageswara Rao (Oak Ridge National Laboratories). The International Society of Information Fusion (ISIF) award program chaired by W. Dale Blair recognizes Edward Waltz for the Yaakov Bar-Shalom Award for a Lifetime of Excellence in Information Fusion and Florian Meyer for the Young Investigator Award.

You will also have the pleasure to read a detailed and stimulating review by Jesus Garcia Herrero (Universidad Carlos III de Madrid) of a sample of chapters from the book *Systems Engineering and Artificial Intelligence* edited by William F. Lawless, Ranjeev Mittu, Donald A. Sofge, Thomas Shortell, and Thomas A. McDermott. A short report on the ISIF working group by Darin Dunham (Lockheed Martin) and a brief on the interesting project "Automation in UAV Remote Deliveries" by Nickolay Jelev (Windracers), James Scanlan (Southampton University), and Charles Scales (Windracers) complete the issue. As usual, advertisements for future events will hopefully stimulate your next conference participation.

This fifth issue of *Perspectives* would clearly not exist without the contributions of all authors, the careful reviews of the Associate Editors Wolfgang Koch, Lyudmila Mihaylova, Murat Efe, Emre Ozkan, Jesus Garcia Herrero, Paulo Costa, the invaluable and insightful advice of the AEiC Roy Streit, and the support of the Administrative Editor, David W. Krout. Thank you to all for your dedication, ideas, and energy.

Anne-Laure Jousselme
Editor-in-Chief
Perspectives on Information Fusion