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Automatic Target Recognition XXIX

**Riad I. Hammoud
Timothy L. Overman**
Editors

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Introduction

Welcome to SPIE's Automatic Target Recognition Conference XXIX. This year had changes in chairmanship with Abhijit Mahalanobis and Firooz A. Sadjadi, two icons in the ATR community, stepping down to pursue other activities; and the introduction of two new ATR Conference Chairs Riad I. Hammoud and Timothy L. Overman. Abhijit and Firooz, thank you for your many years of service as Conference Chairs for the ATR Conference.

This year, as the new Conference Chairs, we spiced up the conference program a bit by adding new sessions in Machine Learning for ATR and Remote Sensing into our successful Machine Learning for ATR panel which we introduced last year. We also invited noted leaders and motivators in the community as Keynote Speakers to set the tone for each conference day. We also included more Invited Papers focusing on Machine Learning advancements in ATR.

This year we had a significant increase of published papers in these proceedings. We also brought back our Best Paper Award and Best Student Paper Awards this year. Our Best Paper Award went to Dr. Michael Teutsch for his paper on "ability of region proposal networks for multispectral person detection." Our Best Student Paper Award went to Ms. Irene L. Tanner for her paper on "Fundamentals of target classification using deep learning." Rumor has it, Ms. Tanner received five verbal job offers immediately after her presentation. The authors each received \$2,500 cash along with a nice award certificate from SPIE. Congratulations to the winners on behalf of SPIE and the ATR Conference Chairs and committee members. Our special thanks to the award sponsor Lockheed Martin Corporation for making this cash award possible. We offer these cash awards based on submitted paper quality and presentation effectivity at the conference, to encourage novel paper submissions from both students and the professional community.

We would like to thank the ML4ATR panel members Todd Rovito (Air Force Research Laboratory), Wesam Adel Sakla, (Lawrence Livermore National Laboratory), Erik P. Blasch (Air Force Research Laboratory), and Bingcai Zhang (BAE Systems). We would also like to thank Keynote Speakers Kevin Priddy (Air Force Research Laboratory), Richard W. Linderman (United States Office of the Undersecretary of Defense) and John Haddon (Lockheed Martin Corporation) for providing thought-provoking and exciting talks in Machine Learning and its impacts on ATR in all topics.

A special thanks to all the paper presenters and those presenters that were able to fill in for scheduled presentations. A very special thanks to the SPIE staff for their support in organizing a very successful conference in 2019. Finally, a special thanks

to the attendees who provided an audience and engaged with the presenters, without you this conference would not be possible.

We are planning a book project on ATR which will provide an up-to-date comprehensive review of the ATR field leveraging selected papers from the ATR conference proceedings. Finally, we look forward to your participation next year at the ATR Conference XXX for SPIE Defense + Commercial Sensing 2020, April 26-30, in Anaheim California.

Riad I. Hammoud
Timothy L. Overman