SPIE. DEFENSE+ COMMERCIAL SENSING

13 - 17 April 2025
Gaylord Palms Resort &
Convention Center
Orlando, Florida, USA

Submit abstracts by
2 October 2024

Signal Processing, Sensor/Information Fusion, and Target Recognition XXXIV (DS307)

Conference Chairs: **Ivan Kadar,** Interlink Systems Sciences, Inc. (United States); **Erik P. Blasch,** Air Force Research Lab. (United States); **Lynne L. Grewe,** California State Univ., East Bay (United States)

Conference Co-Chairs: **Bhashyam Balaji,** Defence Research and Development Canada (Canada); **Thia Kirubarajan,** TrackGen Solutions Inc. (Canada)

Program Committee: **Dave Braines,** IBM United Kingdom Ltd. (United Kingdom); **Alex L. Chan,** DEVCOM Army Research Lab. (United States); **Kuochu C. Chang,** George Mason Univ. (United States); **Mark J. Carlotto,** General Dynamics Mission Systems (United States); **Chee-Yee Chong,** Independent Consultant (United States); **Frederick E. Daum,** Raytheon Missiles & Defense (United States); **Jean Dezert,** ONERA (France); **Laurie H. Fenstermacher,** Air Force Research Lab. (United States); **Brian Jalaian,** DEVCOM Army Research Lab. (United States); **Georgiy M. Levchuk,** Aptima, Inc. (United States); **James Llinas,** Univ. at Buffalo (United States); **Uttam Majumder,** National Geospatial-Intelligence Agency (United States); **Harley R. Myler,** Lamar Univ. (United States); **Ruixin Niu,** Virginia Commonwealth Univ. (United States); **Sean M. O'Rourke,** Air Force Research Lab. (United States); **Todd Rovito,** Air Force Research Lab. (United States); **Andreas E. Savakis,** Rochester Institute of Technology (United States); **Robert W. Schutz,** Consultant (United States); **Stelios C.A. Thomopoulos,** National Ctr. for Scientific Research "Demokritos" (Greece); **Andre J. Van Rynbach,** Air Force Research Lab. (United States); **Edward L. Waltz,** Virginia Polytechnic Institute and State Univ. (United States); **Peter K. Willett,** Univ. of Connecticut (United States); **Kaipei Yang,** Plato Systems (United States); **Shanchieh Jay Yang,** Rochester Institute of Technology (United States); **Yufeng Zheng,** The Univ. of Mississippi Medical Ctr. (United States)

This conference addresses advances in all aspects of systems and algorithms used in all levels of information fusion. This conference encourages a range of issues pertinent to the target presence/recognition, such as signal/image data processing, exploitation, and dissemination; feature extraction and tracking; multisensor/data/information fusion; resource management, processing and computational complexity, decision-making and human's role, and deployment image compression, compressive sensing, and processor architectures. Defense, security as well as dual-use and commercial applications of the acquisition, signal processing, and information fusion problems will be considered.

Papers are solicited, but not limited to, the following and related topics:
- multisensor and multisource information fusion
- data registration and compression
- signal processing, filtering, and analysis
- image processing and (target) detection, recognition, and classification
- Bayesian, fuzzy logic, and evidential reasoning and techniques
- entropy, complexity theory, and random sets
- tracking and sensor/data fusion methods and architectures
- deep machine learning and AI multimodal methods
- situation/threat assessment and intent modeling
- adaptive, robust, and knowledge-based resource management
- distributed Information fusion, communications, and networking
- physics-based and human-derived information fusion (aka hard and soft)
- context-enhanced information fusion for complex environments
- human-computer interface and social/cultural, cognitive and behavioral modeling
- dynamic data driven applications systems with big data analytics
- measures-of-performance, effectiveness, and usability
- systems engineering evaluation methods for verification and validation
- predictive and proactive data analytics
- computational and optimization techniques
- quantum information processing to support sensing and networking
- smart cities, autonomous cars, multimedia, logistics, and surveillance
- coordination of cyber physical systems (CPS) and internet-of-things (IoT)
- biomedical, agricultural, social, and industrial systems
- multisensor and multisource information fusion implementation issues
- commercial applications of multisource information fusion.

In addition, this conference plans to host in an invited panel composed of internationally recognized experts.

BEST STUDENT PAPER AWARD

We are happy to announce a best student paper award, to be judged at the conference (papers must acknowledge first student author when submitting). The best student paper award for the SPIE Signal Processing, Sensor/Information Fusion, and Target Recognition conference is picked by a committee delegated by the program chairs of the conference. It recognizes the very best work appearing at the conference where the first author is a student.

www.spie.org/DS307call

SPIE.

Present your research at SPIE Defense + Commercial Sensing

Below are abstract submission instructions, the accompanying submission agreement, conference presentation guidelines, and guidelines for publishing in the Proceedings of SPIE on the SPIE Digital Library. Submissions subject to chair approval.

Important dates

Abstracts due	2 October 2024
Registration opens	December 2024
Authors notified and program posted online	30 December 2024
Submission system opens for manuscripts and poster PDFs*	10 February 2025
Poster PDFs due for spie.org preview and publication	19 March 2025
Manuscripts due	26 March 2025
Advance upload deadline for oral presentation slides**	11 April 2025

*Contact author or speaker must register prior to uploading
**After this date slides must be uploaded onsite at Speaker Check-in

What you will need to submit

- Title
- Author(s) information
- Speaker biography (1000-character max including spaces)
- Abstract for technical review (200-300 words; text only)
- Summary of abstract for display in the program (50-150 words; text only)
- Keywords used in search for your paper (optional)
- Check the individual conference call for papers for additional requirements (i.e., special abstract requirements or instructions for award competitions)

Note: Only original material should be submitted. Commercial papers, papers with no new research/development content, and papers with proprietary restrictions will not be accepted for presentation.

How to submit your abstract

- Visit the conference page: www.spie.org/DS307call
- You may submit more than one abstract but submit each abstract only once.
- Click the "Submit An Abstract" button on the conference page.
- Sign in to your SPIE account or create an account if you do not already have one.
- Follow the steps in the submission wizard until the submission process is completed.

If your submission is related to an application track below, indicate the appropriate track when prompted during the submission process.

Application tracks

An application track is a grouping of presentations on a topic of interest across all conferences. During submission of the abstract, the submitting author should select an application track if it is relevant to their research.

AI/ML: Papers that showcase the use of artificial intelligence, machine learning, and deep learning to create and implement intelligent systems

Microelectronics: Papers that highlight advances in materials, design, fabrication, integration and applications of silicon or compound semiconductor microelectronics for use in the security and defense sectors and the commercial marketplace.

Space: Papers that highlight utilization of photonics in space or ground segment components, payloads, platforms, and sensor data exploitation for use in satellite constellations, communications, space situational awareness, and derived information products

Sustainability: Papers that highlight advances in materials, design, fabrication, integration and applications of silicon or compound semiconductor microelectronics for use in the security and defense sectors and the commercial marketplace.

Submission agreement

All presenting authors, including keynote, invited, oral, and poster presenters, agree to the following conditions by submitting an abstract:
- Register and pay the conference registration fee
- Agree to receive email messaging for the conference series
- Oral presenters: agree to recording and publication of your onsite presentation (slides synched with voice) in the Proceedings of SPIE in the SPIE Digital Library
- Poster presenters: one person may not present more than two posters in a poster session; submit a poster PDF for preview in the online program (web and app) and for publication in the Proceedings of SPIE in the SPIE Digital Library

- Submit a manuscript by the advertised due date for publication in the Proceedings of SPIE in the SPIE Digital Library
- Obtain funding for registration fees, travel, and accommodations
- Attend the meeting
- Present at the scheduled time

Review and program placement
- To ensure a high-quality conference, all submissions will be assessed by the conference chair/editor for technical merit and suitability of content
- Conference chairs/editors and/or SPIE staff reserve the right to reject for presentation any paper that does not meet content or presentation expectations
- Final placement in an oral or poster session is subject to chair discretion

Publication of Proceedings in the SPIE Digital Library
Increase your professional visibility and publish in the world's largest collection of optics and photonics research. Your peers access approximately 18 million papers, presentations, and posters from the SPIE Digital Library each year.
- Only manuscripts, presentations, and posters presented at the conference and received according to publication guidelines and due dates will be published in the Proceedings of SPIE in the SPIE Digital Library
- Manuscripts, presentations, and posters will be officially published after the event in the SPIE Digital Library
- Conference chairs/editors or SPIE staff may require revision before approving publication and reserve the right to reject for publication any manuscript or presentation that does not meet acceptable standards for a scientific publication
- Conference chair/editor and/or SPIE staff decision to accept or reject a manuscript, presentation, or poster for publication is final
- Authors must be authorized to provide a suitable publication license to SPIE; authors retain copyright of all scientific material
- SPIE retains rights to distribute and market the official SPIE recording of the presentation and/or submitted poster
- SPIE partners with relevant scientific databases and indexes to enable researchers to easily find papers published in the Proceedings of SPIE. The databases that abstract and index these papers include Astrophysical Data System (ADS), Ei Compendex, CrossRef, Google Scholar, Inspec, Scopus, and Web of Science
- More publication information available on the SPIE Digital Library.

SYMPOSIUM CHAIRS
Ann Marie Raynal
Sandia National Labs. (USA)

Ravi Ravichandran
BAE Systems (USA)

SYMPOSIUM CO-CHAIRS
Tien Pham
The MITRE Corporation (USA)

Doug Droege
L3Harris (USA)

Contact information

QUESTIONS?

Contact the coordinator listed in your spie.org account.

For questions about your presentation, submitting an abstract, or the meeting, contact your conference program coordinator.

For questions about publication or the SPIE Digital Library, contact your proceedings coordinator.

SPIE. DEFENSE+ COMMERCIAL SENSING