

FUSION 2019

22nd International Conference on Information Fusion



July 2-5, 2019, Ottawa, Canada

Call for Papers and Proposals

The International Conference on Information Fusion provides the best forum to present foundational, technological, and application-focused innovations in the sensor, data, information and knowledge fusion domains. For more than two decades, this distinctive conference has brought together researchers and practitioners from academia, industry, and government agencies working in these domains with application to surveillance, aerospace, robotics, intelligent transportation, sensor networks and biomedical engineering, among others. We invite researchers and practitioners to submit papers that advance the state-of-the-art in these research and application areas. The 2019 conference is focused on advancing the employment of multidisciplinary and innovative methods for solving the most challenging problems in the field, inclusive of methods that could be called disruptive to the traditional concepts in data and information fusion. All accepted papers will be made available on IEEE Xplore.

Topics of Interest

The field of information fusion has been undergoing major changes due to the ubiquity of heterogeneous sensors, rapid development in computing technology, intense focus on data-driven techniques and emerging application domains such as intelligent transportation. We actively solicit papers that expand the reach of information fusion to new theoretical frameworks, processing techniques, application domains and computing paradigms. We encourage papers, tutorials, and special sessions that explore the interplay between traditional model-based techniques and emerging data-driven artificial intelligence, machine learning, and autonomous methodologies at both high-level and low-level data and information fusion.

The following is a non-exhaustive list of areas and topics of interest:

Theory and representation	Algorithms	Applications	Solution paradigms	Data specific processing
Probability theory	Cognitive methods	Soft-hard fusion	Sequential inference	Image and video
Bayesian inference	Localization and signal processing	Autonomous systems	Data mining	Radar
Argumentation	ATR, classification and identification	Defense and security	Graph analysis	Lidar
Dempster-Shafer theory	Nonlinear filtering	Robotics	Ontology and semantics	Passive sensors
Possibility and fuzzy set theory	Data association, tracking and prediction	Intelligent transportation	Modeling, realization and evaluation	Soft and human data
Rough sets	Situation and impact assessment/prediction	Manufacturing and mining	Target and sensor modeling	Artificial intelligence
Logic-based fusion	Alignment and registration	Economics, finance and fintech	Benchmarks and testbeds	Machine, deep and transfer learning
Preference aggregation and decision theory	Pattern and behavioral analysis	Environmental monitoring	Computational methods	Topic modeling
Random sets	Architectures and distributed fusion	Medical care and bioinformatics	Cloud and edge computing	Natural language processing
Finite point processes	Process and sensor resource management	Critical infrastructure protection	Fusion performance	Contextual adaptation

Special Sessions, Tutorials, Panels, and Demonstrations

In addition to the above topics, you can submit your proposals for special sessions on emerging or focused topics, tutorials on theory or application, panel discussions on topics of importance, and technology or software demonstrations of engineering systems. See www.fusion2019.org for further information.

Submissions

Prospective authors are invited to submit papers electronically at the conference website www.fusion2019.org using the paper templates and submission instructions therein. Submitted papers must be no more than eight pages in length. All papers must be approved for public release prior to submission.

Important Deadlines

Proposals for special sessions, tutorials, panels and demonstrations: **February 25, 2019**

Full paper submission: **March 11, 2019**

Notification of acceptance: **May 1, 2019**

Final submission and early registration: **June 1, 2019**

General co-chairs:

Jim Llinas, *CMIE, SUNY at Buffalo, USA*

Elisa Shahbazian, *OODA Technologies, Canada*

Finance co-chairs:

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Program co-chairs:

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Jesus Garcia Herrero, *Univ. Carlos III, Spain*

Galina Rogova, *SUNY at Buffalo, USA*

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Publication co-chairs:

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Mike McDonald, *DRDC Ottawa, Canada*

Local arrangements and publicity chair:

Mihai Cristian Florea, *Thales Research & Technology, Canada*

Tutorials co-chairs:

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Jack Ding, *DRDC Ottawa, Canada*

Ali Raz, *Purdue University, USA*

Pieter de Villiers, *University of Pretoria, South Africa*

Special sessions/panels co-chairs:

Fredrik Gustafsson, *Linköping University, Sweden*

Zhunga Liu, *Northwestern Polytechnical University, China*

Luc Pigeon, *DRDC Valcartier, Canada*

Ratnasingham Tharmarasa, *McMaster University, Canada*

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Stefano Coraluppi, *STR, USA*

Ivan Kadar, *Interlink Systems Sciences Inc., USA*

Mahendra Mallick, *Consultant, USA*

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Tony Ponsford, *Consultant, Canada*

International liaison co-chairs:

Zhansheng Duan, *Xi'an Jiaotong University, China*