IEEE Sensors Letters
Special Issue on Multimodal Data Fusion
Enabling Generalized Solutions, Metrics, and Processes Across Applications

DESCRIPTION
An ability to fuse the ever-growing volumes of collected data to extract detailed system understanding has the potential to enable more efficient and effective solutions across sectors. This special issue explores opportunities for working toward the next stage of understanding and discovery in the field of multimodal data fusion – i.e., the development of generalized solutions, metrics, and processes that can integrate insight in algorithm development from a wide range of domains and disciplines to accelerate progress and augment knowledge in all areas. This special issue brings together experts from academia, industry, and government and from many domains (healthcare, transportation, energy, environment, robotics, manufacturing, data science, signal processing, etc.) to map out the current state of research, prior successes and remaining challenges, and research suggesting potential pathways forward in this field. This cross-pollination and sharing of lessons is intended to provide a forum for identifying patterns, sharing challenges, and collectively plotting a roadmap toward achieving the goal of supporting generalized solution development. This special issue serves as a companion to the Multimodal Data Fusion 2018 Workshop Report which integrates learnings from the community; in contrast, the special issue highlights individual research efforts which inform the discussion and conclusions of the report, as well as demonstrating the range of application areas and variety in suggested research pathways represented by the researchers actively working on multimodal data fusion research problems. Submission to this Special Issue is open to the general research community, however before submitting authors are advised to contact the guest editors to confirm that the proposed topic is within scope.

MULTIMODAL DATA FUSION TOPIC AREAS:
- Disciplines: Energy, Environment, Healthcare, Infrastructure, Manufacturing, Robotics, Transportation, IoT, etc.
- Approaches: Fusion levels (data, feature, inference), Synchronization / registration, Feature extraction / dimensionality reduction, Probabilistic inference modeling, Supervised / unsupervised learning, Parametric / non-parametric algorithms, Transparent / blackbox methods, Data-driven / physics-based / hybrid models, etc.

KEY DATES:
- Deadline for Submission: August 31, 2018
- First Reviews Due: September 30, 2018
- Revised Manuscripts Due: October 15, 2018
- Final Decisions: November 1, 2018
- Target Publication Date: November 15, 2018

GUEST EDITORS
- Chun-An Chou [contact], Northeastern University, ch.chou@northeastern.edu, 617-373-3865
- Xiaoning Jin, Northeastern University, xi.jin@northeastern.edu, 617-373-8733
- Amy Mueller, Northeastern University, a.mueller@northeastern.edu, 617-373-8131
- Sarah Ostadabbas, Northeastern University, ostadabbas@ece.neu.edu, 617-373-4992

SUBMISSION FORMAT
Papers should be no longer than 4 pages and should focus on aspects of MMDF with relation to sensors and/or sensing systems. In preparation authors should follow the instructions given on the IEEE Sensors Letters homepage. Manuscripts must be submitted through the IEEE online portal at https://mc.manuscriptcentral.com/sensors-letters as "MMDF Paper" (for consideration in the Special Issue please do not submit as "Regular Letter").