Intelligent Computing: Theory and Applications VI (DS37)

Part of the SPIE International Defense and Security Symposium
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Conference Chairs: **Kevin L. Priddy**, Air Force Research Lab.; **Emre Ertin**, The Ohio State Univ.

Program Committee: **Gianfranco Basti**, Pontificia Univ. Lateranense (Italy); **William S. Hortos**, Associates in Communication Engineering Research and Technology; **Anke Meyer-Bäse**, Florida State Univ.; **Mark E. Oxley**, Air Force Institute of Technology; **Todd V. Rovito**, Air Force Research Lab.; **Eugene Santos, Jr.**, Dartmouth College; **Robert L. Williams**, Air Force Research Lab.

The focus of the conference is on applying intelligent computing techniques to persistent sensing. Persistent sensing consists of capturing data over long time periods and then using the time domain to determine what is occurring. Given the recent events in London and virtually every day in Iraq, there is a need for research to focus on determining when a dangerous situation may be occurring or for forensics after an event occurs. The advent of large, ~70 Mpixel, video images has placed a premium on fast computational techniques to detect anomalous events and to alert operators when these events are to occur. In addition to measuring the environment and processing the collected data, these systems are required to form ad hoc networks with other sensors and to communicate information rather than data to the operator.

Persistent sensing is of great interest to DARPA and the rest of the DoD and we encourage paper submissions that address problems in this area. In addition, the conference is interested in other real-world applications and recent theoretical developments in the area of intelligent computing, including but not limited to, neural networks, expert systems, Bayesian networks, fuzzy logic, and evolutionary computation. The goal is to provide a forum for interaction between researchers and industrial/government agencies with advanced or complex information processing requirements. Sessions containing papers from the different disciplines in related applications will be the highlight of this conference. Papers that investigate advantages/disadvantages of intelligent computing solutions in specific real-world applications will be published in the conference proceedings and presented at the conference orally or as a poster. The poster session will contain papers by the session chairs to allow interaction by attendees in small groups.

Papers that clearly state existing problems in information processing that could potentially be solved by intelligent computing techniques will also be considered.
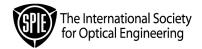
Sessions will concentrate on:
- comparative performance in applications requiring intelligent computing such as target recognition, object recognition, speech processing, speaker identification, signal processing in realistic environments, robotics, process control, and image processing
- smart sensor technology
- demonstrations of properties and limitations of existing or new intelligent computing methods
- environments for development of intelligent computing algorithms
- related hardware implementation technologies that are either general purpose or application specific
- data mining and classical machine learning methods
- knowledge acquisition and representation
- physiologically and biologically motivated information processing and representation
- homeland defense applications
- multi-agent learning
- applications of support vector machines.

Special Instructions to Authors
In addition, authors who wish to create special sessions should contact the chairman directly: Kevin L. Priddy-kevin.priddy@wpafb.af.mil

Due to the limited number of oral sessions, we cannot accommodate requests for oral-only presentations without the prior approval of the Conference Chair. It has been the goal of this conference to allow for as many oral sessions as practical given time and space limitations. Any program committee member can guarantee acceptance of brief oral overviews followed by poster interactive presentations. There will be no differentiation between poster and oral papers in the proceedings.

Abstract Due Date: 3 September 2007
Manuscript Due Date: 18 February 2008

Submission of Abstracts for SPIE Defense and Security Symposium

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- Authors and coauthors attending the meeting will obtain funding for their registration fees, travel, and accommodations, independent of SPIE, through their sponsoring organizations before submitting abstracts.

- All clearances, including government and company clearance, have been obtained to present and publish. If you are a DoD contractor, allow at least 60 days for clearance.

- SPIE is authorized to circulate your abstract to conference committee members for review and selection purposes.

- Accepted abstracts may be published in printed and web programs promoting the conference. Please submit only 250-word abstracts that are suitable for publication.

- A full-length manuscript (8-12 pages) for any accepted oral or poster presentation will be submitted for publication in the SPIE Digital Library and conference Proceedings.

2. Prepare to submit:

- Have all contact information (full names, affiliations, addresses, phone numbers, and emails) for your coauthors ready.

- Only original material should be submitted.

- Abstracts should contain enough detail to clearly convey the approach and the results of the research.

- Commercial papers, papers with no new research/development content, and papers where supporting data or a technical description cannot be given for proprietary reasons will not be accepted for presentation in this conference.

3. Submit your abstract online at:

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Browse to locate the conference to which you are submitting or review all conference calls to find the right fit for your abstract.

You will be prompted to sign in to the MySPIE system. If you have a MySPIE account, sign in using your username and password. First-time users of MySPIE can create a new account by clicking on the create new account link.

Review, Notification, Program Placement

- To ensure a high-quality conference, all abstracts and Proceedings manuscripts will be reviewed by the Conference Chair/Editor for technical merit and suitability of content. Conference Chair/Editors may require manuscript revision before approving publication, and reserve the right to reject for presentation or publication any paper that does not meet content or presentation expectations. SPIE's decision on whether to accept a presentation or publish a manuscript is final.

- Applicants will be notified of abstract acceptance and sent manuscript instructions by e-mail no later than 10 December 2007.

- Final placement in an oral or poster session is subject to the Chairs' discretion. Instructions for oral and poster presentations will be sent to you by e-mail.

Proceedings of SPIE and SPIE Digital Library

- Full-manuscripts will be Chair/Editor-reviewed and published in the *Proceedings of SPIE* and in SPIE Digital Library.

- Manuscript instructions will be e-mailed to the contact author and are also available from the "Authors and Presenters" link on the conference website.

- Authors must be authorized to transfer copyright of the manuscript to SPIE, or provide a suitable publication license.

- Only papers presented at the conference and received according to publication guidelines and timelines will be published in the conference Proceedings and SPIE Digital Library.

- Published papers are indexed in leading scientific databases including INSPEC, Ei Compendex, Chemical Abstracts, International Aerospace Abstracts, ISI Index to Scientific and Technical Proceedings and NASA Astrophysical Data System, and are searchable in the SPIE Digital Library. Full manuscripts are available to SPIE Digital Library subscribers.