

18th International Workshop on Principles of Diagnosis (DX-07)

May 29-31, 2007
Nashville, Tennessee, USA

Workshop Website: <http://www.isis.vanderbilt.edu/dx07>
Workshop email: [dx07 at isis dot vanderbilt dot edu](mailto:dx07@isis.vanderbilt.edu)

Call for Papers

The International Workshop on Principles of Diagnosis is an annual event that started in 1989 rooted in the Artificial Intelligence (AI) community. Papers presented at the workshop cover a variety of theories, principles, and computational techniques for diagnosis, monitoring, testing, reconfiguration, fault-adaptive control, and repair of complex systems. Applications of these theories, principles, and techniques to industry-related disciplines and other real-world problems are also important topics of the workshop.

Like the previous workshops in this series, DX-07 encourages the interactions and the exchange of theories, techniques, applications, and experiences amongst researchers and practitioners from different backgrounds: Artificial Intelligence, Control Theory, Systems Engineering, Software Engineering and other related areas, who share an interest in different aspects of diagnosis, and the related fields of testing, reconfiguration, maintenance, prognosis, and fault-adaptive control.

DX is a lively forum that has traditionally adopted a single-track program with a limited number of participants in order to promote detailed technical exchange and debate while at the same time making efforts to develop synergistic approaches to solving real-world problems. We welcome papers on topics that are related but not limited to the following:

- Formal theories and computational methods for diagnosis, that include monitoring, detection and isolation, testing, repair and therapy, reconfiguration, fault tolerance, diagnosability analysis, and other related topics.
- Modeling for diagnosis that includes symbolic, numeric, discrete, discrete-event, continuous, hybrid, probabilistic, functional, behavioral, qualitative, abstractions, and approximation methods. Effective modeling approaches for large systems are of particular relevance.
- Computational issues that address combinatorial explosion, use of structural and hierarchical knowledge, focusing strategies, resource-bounded reasoning, real time analysis, and other related topics.
- Diagnosis processes that include strategies for measurement selection, sensor placement, test actions design, active testing, embedded diagnosis systems, preventive diagnosis, fault tolerance strategies, fault-adaptive control, and distributed diagnosis.
- Bridge between DX (AI-based diagnosis methods) and other diagnosis methodologies: FDI, control-based techniques, statistical and probabilistic methods, design, model checking, machine learning, non-monotonic reasoning, planning, execution, real-time languages, software verification and validation, debugging, and hardware testing.
- Real-world applications and integrated systems in a wide range of fields including transportation systems, space and aeronautics, process industries, medical domains, and

bioinformatics. Case studies of tech transfer that resulted in success or failure are especially welcome.

Program Committee

Program Chairs:

Gautam Biswas, Vanderbilt University, USA
Xenofon Koutsoukos, Vanderbilt University, USA
Sherif Abdelwahed, Vanderbilt University, USA_

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Workshop Organizing Committee:

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Xenofon Koutsoukos, Vanderbilt University, USA
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Location

DX-07 will be hosted by the Institute for Software Integrated Systems (ISIS – see <http://www.isis.vanderbilt.edu/>) in the School of Engineering (http://frontweb.vuse.vanderbilt.edu/vuse_web/) at Vanderbilt University, Nashville, TN (<http://www.vanderbilt.edu/>). The workshop will be held at the Gaylord Opryland Resort and Convention Center (<http://www.gaylordhotels.com/gaylordopryland/>) in Nashville. Gaylord Opryland is recognized around the world for its extraordinary service, luxurious accommodations and first-class entertainment. Under majestic, climate-controlled glass atriums, you'll be surrounded by nine acres of lush indoor gardens, winding rivers and pathways, and sparkling waterfalls where you can unwind, explore, shop, dine, and be entertained to your heart's content.



Nashville, Music City, USA, typically enjoys a mild and pleasant climate in May. Music is what makes this city hum, but the city is also known for its dedication to the fine arts and higher education. Major industries include automobile manufacturing, healthcare, printing and publishing, and music production. The city boasts of over 40 different attractions, from Civil War battle sites to Faith Hill's dress to priceless Picasso paintings to a full size replica of the Parthenon to the famous Grand Ole Opry. There truly is something for everyone in Nashville - take a tour of an antebellum home rich in history, climb a tower built for a child but strong enough for an adult, browse the country music archives or take in a dinner at a comedy club. For live music in the evenings, check out the Bluebird Café, Bourbon Street Blues and Boogie Bar, Congo Square, Station Inn, and the Wildhorse Saloon.

Submission Information

Final papers must be prepared in AAAI format (see <http://www.aaai.org/Publications/Templates/AuthorKit.zip>), and must not exceed 8 pages in length. Authors must submit their paper's title and abstract via the web page <http://www.isis.vanderbilt.edu/dx07> by **February 19, 2007**. A PDF file of the full paper (again in AAAI format and no more than eight pages in length) should then be uploaded via the workshop web-page by **February 23, 2007**. Postal addresses, electronic mail, fax, and telephone numbers should be listed on the cover page of all papers.

Authors will be notified of acceptance or rejection by April 2, 2007. Accepted papers must be revised to address the referees' comments. **Camera-ready copies of the final paper are due by May 4, 2007**. Accepted papers qualify as regular or poster papers. All accepted DX papers will be published in the Workshop notes and CD ROM. The Workshop notes and CD ROM will be distributed to participants to facilitate resubmission of papers to conferences or journals.

For those who wish to attend the Workshop without submitting a paper, please email a short abstract describing your research interests to [dx07_isis dot Vanderbilt dot edu](mailto:dx07_isis@vanderbilt.edu) by February 16, 2007. Invitations will be mailed out by April 9, 2007. To promote active discussion at the workshop, attendance will be by invitation only.

For additional details, please look up the conference web site: <http://www.isis.vanderbilt.edu/dx07> or send e-mail to the Program Chairs (Sherif Abdelwahed, Gautam Biswas, and Xenofon Koutsoukos) at [dx07 at isis dot vanderbilt dot edu](mailto:dx07_at_isis_dot_vanderbilt_dot_edu). We look forward to your paper submissions, and look forward to your attending DX-07.

Important Dates

Online submissions open: January 1, 2007 (Monday)

Extended Paper Submission Deadline: February 23, 2007 (Friday)

Reviews available to authors for discussion: March 19, 2007 (Monday)

Notification of Acceptance and Rejection: April 9, 2007 (Friday)

Final Papers Due: May 4, 2007 (Friday)

Conference: May 29, 30, and 31, 2007 (Tuesday, Wednesday, and Thursday).