

Doron Drusinsky

Associate Professor

Research Areas

Software engineering, run-time monitoring, formal verification, real-time constraint validation, UML visualization, knowledge representation and monitoring.

Research Description

My research is focused within a triangle whose nodes are *design*, *verification*, and *knowledge* in embedded systems and distributed systems. In the *design* area I am interested in UML diagrams, especially MSC's and Statecharts, and respective code generation, dynamic visualization, and verification of such programs. In the verification area I am interested in run-time monitoring, execution-based model checking, and auto-generation of requirements. In the knowledge area I am interested in applications of models of knowledge to the run-time verification area; this can be used for knowledge reasoning and verification of distributed systems.

Relevance to DoN/DoD

Run-time monitoring is a new monitoring technique with security applications. Verification (run-time and formal) is key to the success of safety critical systems. Knowledge monitoring has applications for knowledge reasoning and simulation in applications such as war games.

Recent Publications

Doron Drusinsky. Specs Can Handle Exceptions. *Embedded Developers Journal*, November 2001, pp. 10-14 (<http://eet.com/embedsub/archive.html>).

Doron Drusinsky *Formal Specification Exception Handling*, Invited Tutorial, Embedded Systems Conference 2002 (http://www.eetimes.com/in_focus/embedded_systems/OEG20020307S0077).

Doron Drusinsky. *Efficient Temporal Rule Checking*. Proc. Oracle ODTUG 2002 (http://www.odtug.com/2002_handouts.htm#bus)

Doron Drusinsky *Efficient Business Temporal Rule Checking Using Temporal Logic*. Proc. 2002 International Conference on Software Engineering Research and Practice (SERP'02).

Luqi, M. Shing, V. Berzins, J. Puett, Z. Guan, Y. Qiao, L. Zhang, N. Chaki, X. Liang, W. Raqy, M. Brown, D. Floodeen, D. Drusinsky, *SEA Environment for CARA Software*. NPS Technical Report, Oct. 2002.

D. Drusinsky and G. Watney, Applying Run-Time Monitoring to the Deep-Impact Fault Protection Engine, 27'th

IEEE/NASA ICECCS workshop, 2002.

D. Drusinsky, Real-time, On-line, Low Impact, Temporal Pattern Matching, 7th World Multiconference on Systemics, Cybernetics and Informatics (SCI 2003).

C. Artho, D. Drusinsky, A. Goldeberg, K. Havelund, M. Lowry, C. Pasareanu, G. Rosu, W. Visser, Experiments with Test Case Generation and Runtime Analysis, 10th International Workshop on Abstract State Machines (invited), Sicily, Italy, 2003.