

## CRI Seminar

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Wednesday April 22, 2009  
4:00-5:00 PM  
LWSN 1142



### Linear Algebra Techniques and Tools for selected Web-science Applications

Abstract: Internet Algorithmics and Information Retrieval (IR) have become grand challenge application areas for Numerical Linear Algebra. Important problems include dimensionality reduction of very large datasets, and ranking webpages based on link analysis of the Web graph.

In this presentation we discuss some problems from this area paying specific attention to Nonnegative Matrix Factorization and ranking of Web pages with emphasis on the necessary Linear Algebra infrastructure.

We also describe TMG, a useful MATLAB tool that enables the rapid prototyping of algorithms and dataset development in IR and Web-IR.

*Biography - Professor at the Dept. Computer Engineering & Informatics. Software Division Director during 1998-2007. Staff and faculty member at the University of Illinois at Urbana-Champaign (1986-96); assistant professor at the [University of California Santa Barbara](#) (1985-86); visiting researcher at NASA Goddard Space Flight Center (Summer 1982 & 1983). He has participated as Senior Computer Scientist in research and development of the [Cedar](#) vector multiprocessor at the University of Illinois [Center for Supercomputing Research and Development](#) (1987-94); participated in the software development of the Goodyear Aerospace Massively Parallel Processor ([MPP](#)) (1980-85) receiving a NASA group achievement award (For outstanding initiative and creativity in the development, demonstration, and practical application of the first Massively Parallel Processor). His research has been funded by the [US National Science Foundation](#), the US Department of Energy, AT&T and Esprit. He has participated as member in many scientific committees of international conferences and has been serving on the editorial boards of [Parallel Computing](#) (starting 2004), and [International Journal of High Speed Computing](#) (1989-today). In the past he also served on the editorial board of [Computing in Science and Engineering](#) (IEEE Computer Society and American Institute of Physics, 1994-99). Dr. Gallopoulos received his Ph.D. at the Department of Computer Science of the [University of Illinois at Urbana-Champaign](#) under the supervision of [professor Daniel Slotnick](#) and his B.Sc. (First Class Honours) in Mathematics from the Imperial College of Science and Technology (1979).*

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**Coffee and cookies will be served preceding the talk at 3:30 p.m. in LWSN 1142.**

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