CSIS Research Seminar Series
Autumn 1996
Technical Report UL-CSIS-96-6

Geoff Beckworth, Lecturer, School of Management Information Systems, Deakin University, Geelong, Australia. Measuring the success of the RE process. 23rd September, 1996.

Fred Cummins, University of Indiana. Rhythmic Constraints on the Production of Speech. 23rd October, 1996. (in conjunction with the Department of Languages and Cultural Studies)


Dan Resler, Dept. of Mathematical Sciences, Virginia Commonwealth University, Richmond, VA and Visiting Professor with Department of Computer Science and Information Systems, University of Limerick. Do You Trust Your Compiler? Applying Formal Methods to Constructing High-Assurance Compilers. 27th November, 1996, 12h00.

Colman Collins, James Hayes, Denis Hickey, Information Technology Department, University of Limerick. Development of Local Area Networking within the University of Limerick. 11th December, 1996, 12h00.
This seminar outlines the results of a project recently conducted at Coles Myer, (Australia’s largest retailer) and the University of Central Lancashire, (England), to understand the factors which influence the Requirements Engineering (RE) process. These factors have been used as the basis for a Process Quality Management System (PQMS) which will include strategies for process improvement. A key aspect of the system is that the development and implementation is driven by the stakeholders. The PQMS provides the basis for concurrent measurement of the success of the process as well as considering how the products might be measured.

ALL WELCOME

Enquiries to Ita Richardson
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The succession of stresses in spoken English is often perceived as rhythmic, and under certain circumstances (well-rehearsed speech, poetry etc) may produce a pronounced impression of rhythmicity. Attempts to identify rhythm unambiguously in speech have failed, however, leaving the weaker hypothesis that the perceived rhythmicity arises from the well known tendency of the perceptual systems to regularize in the face of noise.

A novel experimental method shows, however, that when subjects are asked to repeat a phrase over and over (a Speech Cycling task), the placement of stresses is indeed subject to strong rhythmic constraints. What is more, the constraints which thus become manifest are seen to be similar in kind to those which are known from the experimental study of limb movements in both humans and animals. The implication is that rhythm organization is a coordinative strategy underlying complex motor behavior in speech and elsewhere.

ALL WELCOME

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Systems development issues occupy a position of central importance in the information systems field and, indeed, much has been prescribed in the quest for successful systems development. However, given the well-documented "software crisis", success is far from guaranteed for systems development projects. Many researchers see the solution to the software crisis in terms of increased control and the more widespread adoption of rigorous and formalised system development methodologies. The arguments and pressures which support the use of methodologies will be discussed. Some evidence of the literature bias which favours methodologies will also be presented. However, the problems associated with the use of methodologies have not perhaps received as much attention in the literature. The seminar will identify a number of arguments and pressures which question the value of methodologies, and reports the results of some empirical research which has investigated the role of methodologies in practice. The critical perspective adopted shows that, contrary to the predominant literature view, the assumption that increased adoption of methodologies would help address the problems inherent in systems development is by no means proven.
Department of Computer Science and Information Systems

Seminar

Knowledge Management in Organisations

Larry Prusak
Managing Principal
IBM Consulting Group
Boston.

9h00, Wednesday 20\textsuperscript{th} November 1996
S2-06 Schuman Building.

This talk will involve a discussion on:

• What is the value of Knowledge in Organisations?
• Key Distinctions between Data, Information, and Knowledge;
• How does one work with Knowledge?
• What does a Knowledge project look like?
• What are the challenges in working with Knowledge?

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Do You Trust Your Compiler? Applying Formal Methods to Constructing High-Assurance Compilers

Dan Resler
Dept. of Mathematical Sciences, Virginia Commonwealth University, Richmond, VA and
Visiting Professor with Department of Computer Science and Information Systems, University of Limerick.

12h00, Wednesday 27th November 1996
S1-20 Schuman Building.

As our society becomes more technologically complex, computer software is being used in many safety-critical applications. Formal methods, which verify that a program meets its specification, provide a way to produce reliable software. However, the result of applying a formal method is usually a program in a language such as C or Fortran. To obtain an executable program, this program must be compiled.

Can one trust a compiler to be correct? Most such compilers were not produced by formal methods. For safety-critical applications, reliance on the correctness of a compiler that has been only validated, rather than verified, defeats the purpose of using a formal method to develop a program.

We discuss how a formal method based on program specification and correctness-preserving program transformations can be used to construct a verified compiler.

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Development of Local Area Networking within the University of Limerick

Colman Collins, James Hayes, Denis Hickey,
Information Technology Department
University of Limerick

12h00, Wednesday 11th December 1996
S1-20 Schuman Building.

It’s more than a decade since we first decided to implement Local Area Networking at the University. The availability, specification and cost of technology has altered radically. This now allows us to plan developments which previously would have been unheard of. The talk traces the various stages in the development of the network, through to our last purchase. It summarizes the difficulties encountered, and the longer term view of where we are proceeding.

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