

The Journal of Research and Practice in Information Technology (JRPIT) ends 2003 on a high note. The highlights are:

1. All four issues of Volume 35(2003) have appeared in 2003.
2. Refereeing times are now acceptable and improving as the backlog clears.
3. Electronic submission and handling of articles has proceeded very smoothly.
4. Favourable feedback about the content of JRPIT, especially the articles of general interest, has been received.
5. There has been a favourable reaction to the inclusion of author photographs.

Let me turn to this issue of JRPIT. We begin with a survey article on Open Source by Bill Appelbe. Bill is CEO of the Victorian Partnership for Advanced Computing (VPAC) and in this article we learn about the history of Open Source, where Open Source is today, and Bill's view of what the future holds. This is an enjoyable, informative and timely article.

The second article is by Shichao Zhang and Chengqi Zhang and is titled "A Probabilistic Data Model and Its Semantics". Shichao and Chengqi observe that "database systems must handle uncertainties in the data they store". These uncertainties occur because of "measurement errors, cognitive errors, approximation errors, calculation errors" etcetera. They say that in the literature there are two approaches to handling such uncertainties, namely probabilistic and fuzzy data models. This paper acknowledges the existence of a "very rich probability theory" and so concentrates on the probabilistic data model to attack this problem. They produce a model which extends the probabilistic relational model of Dey and Sarker (1996) with a view to overcoming some of its shortcomings.

The third paper is by Jim Ng, Ching Ping Low and Ruth Susilo and is titled "Determination of the Availability of a Shared Backup Channel". The challenge addressed in this paper is that of finding a strategy for providing a backup channel in a wide area network when a failure occurs. A dedicated backup would be wasteful of resources in an environment where reliability is high. Searching for a new path only when a failure occurs is, however, not feasible when large bandwidth is needed, such as with multimedia applications. The solution is a shared backup channel, but a mechanism is then needed to limit the number competing for this resource. The authors derive a set of equations for determining the availability of a shared backup path. These equations can be used to design a strategy to produce the desired reliability.

The fourth paper is by Abdul Halim Zaim and is titled "A Markov Model to Calculate New and Hand-Off Call Blocking Probabilities in LEO Satellite Networks." "As a satellite moves, its footprint (the cell served by the satellite) also moves with it. As customers move out of the footprint area of a satellite, their calls are handed off to the satellite following it from behind." The author is interested in the performance of satellite systems during hand-offs and, in particular, the management of both new calls and hand-off calls. He uses a Markov model applied to a situation where some channels (perhaps 10–20%) are called guard channels and can be used only by hand-off calls, while the other channels can be used by both types of calls.

The final paper in this issue is by Ngamnij Arch-int and Peraphon Sophatsathit and is titled "Ontology-based Metadata Dictionary for Integrating Heterogeneous Information Sources on the WWW". Integration of data from different information sources is a challenging problem because of a variety of problems including:

- (i) naming conflicts, where equivalent concepts have different names or unrelated concepts have the same name;
- (ii) data type conflicts, where equivalent properties are defined using different data types;

- (iii) scaling conflicts, where equivalent concepts are defined using different units of measure; and
- (iv) generalisation conflicts, where related concepts are defined in different systems and the concepts in one system subsume the concepts in another. The approach here is to design a metadata dictionary using XML to express its contents.



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