

Publications

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Intelligent Interactive Technology Newsletter

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We are extending our work on customised information delivery to include the production of task-sensitive multimedia presentations. In addition, we have started two research projects in Information Agents, and we are involved in a new research programme at CSIRO on Telecollaboration.

Our work on Isolde has reached an end. The final stage of the project was an evaluation, which is briefly described in this newsletter. Our work on instruction generation is likely to resume next year with a project concerned with integrating language instructions and feedback into an immersive environment developed for training purposes. Watch this space!

We wish you all a Merry Christmas and a Happy New Year.



Question Answering

TIGER: Topical Information Gathering for Easy Reuse.

The explosive growth of electronic data makes it theoretically more possible to have virtually any information under your fingertips; paradoxically, however, the same phenomenon makes it practically more difficult to find information genuinely relevant to user needs. Recognising that there are millions and millions of expert users who conduct information gathering tasks pertaining to their special tasks (topics) in their daily duty-critical performance, TIGER is conceived to make both topical information gathering and information reuse easy.



Objectives

The objectives of the TIGER project are to build a system that can:

- ✓ Gather information relevant to an expert user's information needs in terms of topical structure from multiple heterogeneous sources, whether structured, semi-structured or unstructured;
- ✓ Determine the relationships among different chunks of gathered information;
- ✓ Utilise these relationships to form a coherent document; and
- ✓ Present this information as a coherent document, tailored to the user's, on their required platforms.

Instructional Text Evaluation

We performed an evaluation of the text generated by Isolde, our authoring tool for the production of procedural on-line help.

Objectives: Compare the effectiveness of the instructional text produced by Isolde with that of manually authored instructions, e.g., MS Word Help, in the context of a real task.

Methodology: We followed 4 steps.

- ✓ Choose 3 tasks in Word;
- ✓ Design the 3 corresponding task models using our Task Modelling Tool: Tamot;
- ✓ Generate the on-line documentation with Isolde; and,
- ✓ Evaluate the help on 2 user groups. The experiment consisted of asking people to perform the 3 tasks. We measured the time taken to perform the task and the number of errors made. Users were also asked to fill in a questionnaire to rate the help texts.

Results: They suggest that the text produced by Isolde is of comparable quality to similar texts found in commercial manuals.

1. No significant differences with respect to the number of errors made;
2. Some significant differences in time performance, in favour of Isolde for complex task and in favour of the manually-authored texts for simple tasks; and finally,
3. No significant differences with respect to the acceptability of the help.

Agents and Multi-agent Systems

In order to organise knowledge, collaboration and a proper distribution of functions and tasks, there is need to analyse, model and develop computational systems in which several (semi-) autonomous software agents interact, adapt and work together in a common open environment, combining individual strategies into overall behaviour.

We are now using our technology (in collaboration with CSIRO Telecommunications and Industrial Physics division) in the joint **CSIRO-NASA Ageless Aerospace Vehicle (AAV)** project. The aim of the AAV project is to develop and critically examine concepts for integrated smart sensing and communication networks, with the ultimate goal of developing a self-monitoring, self-repairing aerospace vehicle. A network is expected to self-organise in the face of damage to its parts so that robust monitoring and reporting continues as long as possible.

