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Report on the Second European Conference on Cognitive Modelling

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The Second European Conference on Cognitive Modelling (ECCM-98) was held in Nightingale Hall at the University of Nottingham from 1 to 4 April 1998. As well as presented papers, the conference included tutorials (on Act-R, Soar, and Cogent), invited addresses, symposia, posters, and demonstrations of models and modelling software. A complete listing and information on obtaining the proceedings is available through the conference web pages at "<http://www.psychology.nottingham.ac.uk/staff/ritter/eccm98>".

The call for papers encouraged submissions that reported both a running (i.e. implemented) computer model and some empirical data against which the model was compared. We were pleased with the results. Most of the submission included both those components, the only real exceptions being papers where such a criterion was not appropriate, such as those dealing with tools, architectures, or methodology.

The quantity and the quality were high enough that we were able to be selective. Within the constraints of preparing for a conference—where a large number of papers have to be assessed in a short interval of time, and where decisions about acceptance or rejection have to be made on the basis of a paper as it stands—we were able to provide some serious refereeing. Of course, the review process could not be as thorough as it is for journal publication, but each paper was read and commented on by at least two members of the programme committee and a programme co-chair. We tried hard to make the feedback given to authors clear and informative, especially in cases where changes were suggested or where reasons for rejecting a paper (or accepting it as a poster) were offered.

Of the 40 papers submitted, we accepted 20, and invited a further 10 to be presented as posters (6 of which took up the invitation). We also accepted 5 of the 6 poster contributions. Our main criterion for posters was that they should be of relevance to the cognitive modelling research community, but possibly reporting work that was too preliminary to be presented as a main paper, or possibly focused on a model without as yet including the comparison to data. The papers that were published were visibly improved through the authors' attention to the reviews and their own further revisions. The proceedings were published and further information is available from the web site.

As well as having representation from a wide range of areas of cognitive modelling, the conference was a truly international event, contributions to the programme came from 14 different countries: the UK (11), USA (9), France (8), Germany (7), Italy (3), Belgium (2), Finland (2), The Netherlands (2), Australia, Bulgaria, Greece, Japan, Sweden, and Switzerland (1 each). The proceeding's author index lists no fewer than 80 authors who contributed to the conference. The conference also had international sponsorship. In addition to our departments, support was provided by the UK Engineering and Physical Science Research Council, the European Research Office of the US Army and the US Air Force European Office of Aerospace Research and Development.

Lessons learned

The concentration of models and data was high enough that several new generalisations emerged. Models are starting to interact with complex, interactive task simulations. This leads to and supports more complex behaviours, sometimes caused by multiple interacting mechanisms in the model.

Most models were created within the context of existing architectures, and that the standard for proposing new architectures is increasing. The papers indicated that architectures are being used in new ways, for example, modifying the architecture to simulate fatigue or cognitive development.

How many times to run a model that have includes a stochastic component has been an often asked question in cognitive modelling. Most papers reported running the model once per subject modelled. Having a variety of examples of this lets one see that the most robust approach is to run the model until a clear measure of the expected behaviour and range is available. This gets the most out of the model, for it provides the clearest comparison and is most likely to indicate where the model can be improved.

Future of the conference

It is appropriate to end this summary with some thoughts about the nature of the ECCMs and how they relate to other meetings. Many of us tend to think of cognitive modelling as a research activity dominated by the USA. Yet even in the USA, the publication of descriptions of running computer models and their detailed comparison with empirical data is comparatively rare, and there seem to be no meetings attempting what ECCM is trying to do. The closest that comes to mind is the annual meeting of the Cognitive Science Society. Yet the feel of that meeting is entirely different to ECCM, in part because it is indeed a meeting of a particular scientific society (which ECCM is not), and in part because Cognitive Science (as viewed by the Society) is a broad field, of which cognitive modelling is seen as just a small part. (Although there are many model+data papers there, the ratio is not as high and there are many other types of papers as well.) What makes ECCM distinctive is the point we stressed above, namely our emphasis on the presentation of both an implemented model and its comparison against empirical data, and on keeping a reasonable balance between the two.

The conference built on the success of the first meeting in the series, which had been held in Berlin in November 1996. Its proceedings were initially published as a technical report of the Berlin University of Technology, but a subset of the papers have been revised and extended and are now available as a reasonably priced book (U. Schmid, J. Krems, & F. Wysotzki (Eds.), *Mind modeling —A cognitive science approach to reasoning, learning and discovery*. Lengerich (Germany): Pabst Scientific Publishing, ISBN 3-933151-25-2, \$25/40DM).

There are some uncertainties about future meetings, and especially about our relationship to the ongoing series of European Conferences on Cognitive Science (ECCS: St Malo, 1995; Manchester, 1997; Sienna, 1999). These matters were discussed at a special session during the conference. Nothing was clearly decided about the location and timing of any third ECCM, although the attendees expressed their interest in attending another ECCM and several tentative offers of hosting the next meeting were put forward. We certainly hope that something recognisably similar to the first two ECCMs continues, though perhaps still more international in flavour. To judge from the papers at this conference, cognitive modelling in Europe is in a comparatively healthy state.