Briefly Noted

Speech and Human–Machine Dialog

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Dordrecht: Kluwer Academic Publishers (Kluwer international series in engineering and computer science), 2004, ix+93 pp [originally published in French as *Parole et dialogue homme-machine*, Editions Eyrolles/ CNRS Editions, 2001]; hardbound, ISBN 1-4020-8036-0, $95.00, £61.00, €87.00; e-book, ISBN 1-4020-8037-9, $95.00, 61.00, €87.00

Two long-standing research goals in natural language processing are (1) to develop effective natural language interfaces to databases and (2) to develop theories about the construction of such systems that generalize beyond any one system's application domain. This book is a brief (93 pages!) presentation of one such theory within the context of human–machine spoken dialog.

After describing the authors' approach to natural language understanding via the use of semantic case grammars for parsing phrases within a spoken utterance, the book provides an overview of the different types of modeling needed for spoken dialog. The authors properly make a distinction between task and dialog in modeling while noting how the two are frequently blurred together for pragmatic reasons. In regards to dialog modeling, which is the core topic of the book, they distinguish among three classes of models: (1) structural models, (2) plan-oriented models, and (3) logic models. The bulk of the presentation is on structural models represented as dialog grammars, but unfortunately the authors' critique of the various types of models is rather superficial.

The authors then present a description of their dialog model for information-request dialogs. Their model is based on an analysis of multiple corpora, both spoken and written, that primarily emphasize travel information of various types. The model is presented as a dialog grammar (i.e., it is a structural model), and a brief description of a system architecture and algorithms for task execution and the dialog manager are provided.

While the topic under discussion and the approach taken by the authors is of interest, the overall presentation is unsatisfying for various reasons. Besides the lack of a serious analysis of the trade-offs among the various types of dialog models, the critique and justification of their own model through a careful evaluation is unfortunately also lacking. The authors do present an annotation of a complete 15-utterance dialog from one of their corpora, but that is inadequate to enable a reader to come to an informed judgment about the scientific validity of the proposed model.

In conclusion, given its excessive brevity on key issues, its cost ($95), the fact that it is a translation from a French version of the book published in 2001, and the fact that the results from the book have apparently never appeared in any type of journal publication, I cannot justify recommending this book for personal ownership. It might be helpful as a quick introduction to dialog modeling, particularly in regards to grammatical approaches, but that's about it.—*Ronnie W. Smith, East Carolina University*