

BOOK REVIEWS

NATURAL LANGUAGE COMPUTING: THE COMMERCIAL APPLICATIONS

Tim Johnson

London: Ovum Ltd, 1985, 459 pp.
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This report aims to identify the areas where NLP (natural language processing) is expected to be successful, and to suggest how people and organisations can make use of the opportunities it will create, as users, suppliers or investors. (p. 4)

Tim Johnson has written a very useful guide to the commercial side of NLP applications. It is a large, comprehensive report that runs 459 double-spaced pages. Johnson is a graduate of Imperial College and has previously written a report on Expert Systems (July 1984), so he is familiar with work in other areas of machine intelligence. This report is better technically than one might expect from a layman. At \$395 it is probably most appropriate for managers or researchers who are actively involved in the marketplace and for institutional or library copies.

The major sections of the report are Management Summary, Markets, Technology, Applications, and Company Profiles. The first two sections are of primary interest either to those who are unfamiliar with the major application areas of NLP (described as mainframe and micro database interfaces, dialogue interfaces, content scanning, text editing, machine translation, and talkwriter) or with the business side of projected markets. For example, total US market projections are given as \$15M in 1985, \$420M in 1990, and \$1500M in 1995. These projections are also broken down by application area.

For active researchers in NLP, the technology section will not contain any major surprises. A very brief tour of approaches in syntactic and semantic parsing is followed by a review of current systems in both the mainframe and micro markets. These include Intellect, Ramis II English, Plume, Themis, Easytalk, Clout, NaturalLink, Savvy, Microdata Natural Language, Safeguard Cash-Management System, Logos's Intelligent Translator, ALPS Computer Translation System, Smart Translator, and Weidner MicroCAT. For each of these systems, there is a brief discussion of the product and a summary table that lists pertinent data such as availability, price, computer requirements, implementation language, opportunities for customizing, the software interface, the underlying NL technology, input requirements (menu-driven, ill-formed input, spelling correction), vocabulary size, and dialog management facilities (e.g., ellipsis and anaphora).

The last two sections of the report contain the material of greatest interest to me, since it is not readily available elsewhere. The application section describes user experiences with a number of systems. For example, PPG, an Intellect site, estimates that they were handling 300-500 queries a day in early 1985. In one anecdote, "it took two questions and about five minutes through Intellect to come up with data that would have taken hours by any other route." Johnson also describes the experience of Cognitive Systems with Explorer, a custom system that accesses a cartographic geologic database for oil exploration.

The last section contains profiles of 30 organizations engaged in NLP research or development. The organizations include companies, research labs, and universities. This is the place to find out what is going on at Kurzweil now, what venture capital is supporting the company (Xerox and Wang among others), who has non-exclusive marketing rights to Kurzweil's AI products (Xerox), how many staff they have (50), who their major players are (Dennis Klatt, Francis Ganong, Susumu Kuno and Glen Akers), how they are doing and where they are going. Even those who think they have a fairly comprehensive mental "who's who" of the field should still find this section of interest.

A set of appendices provides additional material, the most useful of which is a listing of organization addresses. My biggest complaint is the lack of an index for a volume this large. As a partial compensation, the table of contents is five pages long; however, it is impossible to quickly find information such as where is Gary Hendrix working (Symantec), which is available from the text.

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BOOLEAN SEMANTICS FOR NATURAL LANGUAGE (Synthese Language Library, 23)

Edward L. Keenan and Leonard M. Faltz

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Part of the enterprise of model-theoretic semantics is the construction of formal tools that illustrate and, one hopes, explain linguistic phenomena. That is, a mathematical apparatus is built that models some feature of natural language, typically the entailment relation between (sets of) sentences. The cornerstone of this approach is the Fregean principle of compositionality, which, when used along with a categorial syntax, suggests