A bibliography of computer applications and quantitative methods in archaeology

N. S. Ryan*

The bibliography on the following pages represents an attempt to bring together papers from earlier CAA proceedings with a significant proportion of other material on related topics. The bibliography originated as a machine-readable resource from that published in Richards & Ryan 1985. Subsequently it has been maintained by the author and has been augmented by contributions from many others; in particular it has benefited from further material assembled by Julian Richards during the preparation of the IFA Computer Usage in British Archaeology volume (Richards 1986b). In this form its primary use has been in the automatic generation of citations and lists of references using the UNIX bib and refer packages in conjunction with the troff typesetting software. More recently it has been converted into a simple database using Ingres from which various formats including BibTeX (used in the preparation of this volume) can be generated.

Whereas a computer based bibliography can accommodate a variety of classification and ordering schemes through the use of keywords and other fields, a single scheme is required for a printed list. A list ordered by author's name and date would serve little purpose beyond demonstrating the scale of the literature. Clearly some form of classification was needed. Initial attempts to divide the material into wholly archaeological or wholly computing oriented subjects proved unsatisfactory so a hybrid approach using the following headings was adopted:

1. Quantitative methods and simulation
2. Finds analysis
3. Survey and excavation recording, and stratigraphic analysis
4. Sites and monuments records
5. Graphics
6. Expert systems and knowledge representation
7. Education

* Computing Laboratory, University of Kent at Canterbury
  Canterbury
  Kent CT2 7NF
8. Publication

9. Scientific techniques

10. Museums

11. General

Within these categories items are ordered firstly by date and then by author to give an indication of the development of the literature through time.

No simple classification can be entirely satisfactory and although the assignment of articles to the finds analysis, survey and excavation recording, and sites and monuments records sections proved relatively straightforward, many articles could have been classified under more than one heading. For example, many articles with a quantitative theme have been included under such archaeological headings as finds or site analysis where they concentrate on the application of the techniques in those areas. The quantitative methods and simulation section thus includes those articles in which quantitative methods were the primary topic, and those with a significant quantitative element but which otherwise ranged over a variety of archaeological subject areas. The Graphics section is similar, with a number of 'applied' articles appearing under other headings.

Three small sections cover topics that have shown signs of an increasingly specialised interest in recent years; expert systems and knowledge representation, education, and publication.

Two further relatively brief sections deal with work in related areas, each of which have their own extensive literature. In both cases the coverage is limited to articles published in the archaeological computing literature with no attempt to include related material published in specialist journals in these areas. The scientific techniques section covers a wide variety of topics including geophysical prospecting, pathology and the various environmental disciplines. This particular subject has received far more detailed coverage in the Leicester University KRAS project (Martlew 1984). The museums section consists largely of material published by or emanating from the Museums Documentation Association, most of which has either appeared in, or has been cited in, the archaeological computing literature.

Finally, the General section includes all those works that would not fit easily into other sections.

The extent of coverage of each topic is variable and the content owes much to bias in my own interests and those of other contributors. Many specialists may find their own particular field has been less than fully covered. To them I can only apologise for the omissions and request that they respond positively by supplying more extensive lists of references.

Copies of the entire bibliography may be obtained by electronic mail from either nsr@uk.ac.ukc (in BibTeX or Bib format) or spqr@uk.ac.soton.cm (in BibTeX format), and the database is also accessible for interactive use through the Archaeological Information Exchange (send electronic mail to aie-request@uk.ac.soton.cm for details). The database will continue to grow as new material is added and contributions, whether single items or entire bibliographies, will be welcomed. It may be possible to publish a list of each year's additions in subsequent CAA volumes.
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