Foreword

As humans, we manage a great deal of information: in our heads, as notes stuck on refrigerators, as shoeboxes full of receipts, and as files on our computers. To be able to find information relevant to any particular task, we need to have all our information organized, and we do, but usually in personal, and sometimes idiosyncratic, ways. As the amount of information grows, we need more structure.

This realization gave rise to the field of structured databases more than half a century ago. Today, most enterprise data, and much else, is stored in such structured relational databases. While such databases are excellent at correctly performing large computations and complete retrievals very efficiently, they are not easy to program or to query. A user not only needs to know a query language like SQL, but also needs to know precisely how the data have been structured and exactly what each attribute has been named.

This access impediment has been known right from the time relational databases were invented. Many smart people have devised many clever interfaces that make database access a little easier. But the holy grail has remained conversational natural language: we want to ask the computer questions in exactly the same way as we would ask questions to a human assistant.

However, even simple natural language queries remained elusive for decades. Only in the past dozen years or so, we have developed the ability to use natural language to pose database queries effectively. In other words, the field of Natural Language Interface for a Database transformed from being a distant vision to a vibrant research area with immediate practical value.

This monograph, written by three leaders in this field, presents an up-to-date survey of the state of the art today.

This "Synthesis" series of monographs includes many works of importance for the field of databases, with their importance being derived from diverse dimensions. Some monographs cover a particularly novel research direction that a research group is pursuing. Others are important because they present an excellent survey of the state of the art in a topic of great interest. This particular monograph is a great example of the latter: it is a perfectly timed survey of a field that has enjoyed tremendous recent success. I hope you find it as illuminating as I do.

Ann Arbor, Michigan, USA, July 2023 *H. V. Jagadish*