

Preface to the second edition

As an interdisciplinary field, computational linguistics has its sources in several areas of science, each with its own goals, methods, and historical background. Thereby, it has remained unclear which components fit together and which do not. This suggests three possible approaches to designing a computational linguistics textbook.

The first approach proceeds from one's own school of thought, usually determined by chance, such as one's initial place of study, rather than by a well-informed, deliberate choice. The goal is to extend the inherited theoretical framework or method to as many aspects of language analysis as possible. As a consequence, the issue of compatibility with other approaches in the field need not be addressed and one's assumptions are questioned at best in connection with 'puzzling problems.'

The second approach takes the viewpoint of an objective observer and aims to survey the field as completely as possible. However, the large number of different schools, methods, and tasks necessitates a subjective selection. Furthermore, the presumed neutrality provides no incentive to investigate the compatibility between the elements selected.

The third approach aims at solving a comprehensive functional task, with the different approaches being ordered relative to it. To arrive at the desired solution, suitability and compatibility of the different elements adopted must be investigated with regard to the task at hand.

In this textbook, the survey Chapters 1 and 2 are based on the second approach, while the remaining Chapters, 3 to 24, are based on the third. The comprehensive task chosen is the design of a robot which can freely communicate in natural language.

The most difficult aspects of this task are treated in Chapters 22–24, which present a declarative outline for programming the semantic and pragmatic interpretation of natural language. Based on a new formulation in a recent article in *Artificial Intelligence* (Hausser 2001c), these chapters have been completely rewritten for the second edition. Sections 22.5, 24.4, and 24.5 go even further than Hausser 2001c, and are followed by a new schematic summary and a new conclusion. Examples and explanations which were contained in the old versions of Chapters 22, 23, and 24 have been moved to the new appendices A, B, and C, respectively.

Many improvements are due to corrections, suggestions, and remarks made in response to the first edition by

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Among the changes is the term “human-computer communication,” which is used in the new subtitle and throughout the book.

Last but not least I would like to express my gratitude to Dr. Virginia Swisher, Pittsburgh, for improving the English. As a non-native speaker it never ceases to amaze me how moving the words around a little, adding or removing a comma, etc., can remove subconscious irritation and enhance readability and understanding.

Erlangen, August 2001

Roland Hausser