

Preface

Automated Configuration has long been the subject of intensive research, especially in Artificial Intelligence, as it is a pervasive problem to be solved and is a good test of various knowledge representation and reasoning techniques. The problem itself shows up in applications as various as electrical circuit design, utility computing, and even concurrent engineering. We define this ubiquitous problem and show the various solution techniques.

We survey about 20 years of these techniques, from the mid-1970s until the mid-1990s. During this time, various general approaches were developed, as well as more specialized techniques. We survey the development of the general problem solving techniques for automated configuration, based on both published academic work and patents.

This book is intended to be an introduction to the topic and a gateway to more detailed descriptions of configuration technology while presenting a possibly different perspective in some regards and covering previously overlooked material, especially the commercial development of configuration technology. This was discovered largely not in the course of academic research but during patent litigation that not only informed the author about a large set of patents but also about the commercial worth of configuration problem solving.

The author depended heavily upon a shorter survey [71]. For more detail on how constraint solving technologies are used for configuration problem solving, Junker [27] is very thorough and recent. For an industrial research perspective, see [23], which adds some detail, especially about specific configurators and specific logics used for problem description and solving.

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