

Preface

The full title of the HCM network project behind this volume is *VIM: A virtual multicomputer for symbolic applications*. The three strands which bound the network together were parallel systems, advanced compilation techniques and artificial intelligence with a common substrate in the programming language Lisp. The initial aim of the project was to demonstrate how the combination of these three technologies could be used to build a virtual multicomputer — an ephemeral, persistent machine of available heterogeneous computing resources — for large scale symbolic applications. The system would support a virtual processor abstraction to distribute data and tasks across the multicomputer, the actual physical composition of which may change dynamically. Our practical objective was to assist in the prototyping of dynamic distributed symbolic applications in artificial intelligence using whatever resources are available (probably networked workstations), so that the developed program could also be run on more exotic hardware without reprogramming.

What we had not foreseen at the outset of the project was how agents would unify the strands at the application level, as distinct from the system level outlined above. It was as a result of the agent influence that we held two workshops in May and December 1997 with the title “Collaboration between human and artificial societies”.

The papers collected in this volume are a selection from presentations made at those two workshops. In each case the format consisted of a number of invited speakers plus presentations from the network partners. The speakers submitted draft manuscripts or abstracts which were distributed as preliminary proceedings at the meetings. The presentations frequently stimulated plenty of discussion — wreaking havoc with the schedule! Following the two meetings, revised versions of the full papers were refereed by the programme committee and on occasion by external referees (acknowledged below). These comments were forwarded to the authors to guide them in improving their papers. It is the final results of these endeavours that appear here.

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