

AAAI-05 Workshop On

MODULAR CONSTRUCTION
OF HUMAN-LIKE INTELLIGENCE

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PREFACE

Building intelligent systems that can collaborate with people and operate in complex environments requires integrating numerous technologies in intricate ways. With a rising interest in humanoid agents and robots for the home, the push for creating well-rounded intelligent beings makes the issue of integration increasingly relevant. For the A.I. researcher integration can involve anything from programming in multiple languages and connecting multiple computers, to integrating several diverse theoretical models of perception, communication, planning and action. It calls for a diverse set of skills and tools.

Waiting for a single inventor, graduate student, professor, university, or even company, to invent and develop all of the needed tools and technologies for integrated cognitive systems is not a viable option – it will take close collaboration between individuals, teams, organizations, industry and academia. Collaboration, however, is often hindered by different languages being used to describe similar things and different sets of solutions being used for solving similar or related problems. This makes integration a difficult problem.

This collection of papers brings together some of the important research being done on integrating numerous cognitive skills in working systems, ranging from physical robots to virtual humans. Modularity is one of the primary mechanism through which we can hope to address the complexities we face when building large systems; the papers address many theoretical issues in the modular modeling of the integrated cognitive skills observed in nature. Practical development issues are also being addressed and several papers present solutions and tools for making the work of the A.I. developer easier.

We believe the papers presented here to be of great importance to the field of A.I. and indicative of the direction in which research in the field needs to head in the coming decades to enable a deeper understanding of what intelligence is, how it operates in nature and how we can model it in machines. Enjoy!

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