An Adaptive Multi-Agent System for Architectural Sketch Interpretation

Jean-Noël Demaret and Pierre Leclercq
LUCID, University of Liège (Be)

Research Project

Automatic interpretation of hand-drawn sketches aims to generate a model of the designer’s intention. This model can be used to evaluate and simulate the building’s performance from the early stages of a design project. As a sketch contains many ambiguities, advanced strategies are needed to explore efficiently the interpretation space. This work proposes a new computer model to achieve more flexible and more robust sketch interpretation.

Model Features

> Multi-agent architecture
Knowledge is distributed between several agents. Agents cooperate/compete to build the interpretation.

> Shared workspace
Where hypotheses are built. It allows communication between agents.

> Adaptive behavior
It depends on what was discovered before (context). More promising paths are explored faster.

The model is being implemented in the software prototype NEMo that aims to interpret architectural sketches.

Software prototype: NEMo

CAAD Futures 2011 • Designing together
@ LUCID • University of Liège • BELGIUM • 4 > 8 July 2011