Bjørner, Dines

To every manifest domain a CSP expression – a rôle for mereology in computer science.

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Summary: We give an abstract model of parts and part-hood relations, of Stanisław Leśniewski's mereology [*R. Casati* and *A. Varzi*, Parts and places: the structures of spatial representation. Cambridge, MA: The MIT Press (1999)]. Mereology applies to software application domains such as the financial service industry, railway systems, road transport systems, health care, oil pipelines, secure [IT] systems, etc. We relate this model to axiom systems for mereology, showing satisfiability, and show that for every mereology there corresponds a class of Communicating Sequential Processe [*C. A. R. Hoare*, Communicating sequential processes. Englewood Cliffs, NJ, etc.: Prentice-Hall International (1985; Zbl 0637.68007)], that is: a λ-expression.

MSC:

68N01 General topics in the theory of software
03A05 Philosophical and critical aspects of logic and foundations
68Q10 Modes of computation (nondeterministic, parallel, interactive, probabilistic, etc.)

Keywords:

mereology; manifest domain; domain description

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