Linköping Electronic Articles in
Computer and Information Science
Vol. 5(2000): nr 35

Conceptual Classification Based on Abstractions

Makoto Haraguchi

Yoshiaki Okubo

Tokuyasu Kakuta

Linköping University Electronic Press
Linköping, Sweden

http://www.ep.liu.se/ea/cis/2000/035/

Published on December 21, 2000 by
Linköping University Electronic Press
581 83 Linköping, Sweden

Linköping Electronic Articles in
Computer and Information Science
ISSN 1401-9841
Series editor: Erik Sandewall

Recommended citation:
<Author>. <Title>. Linköping Electronic Articles in Computer and Information Science, Vol. 5(2000): nr 35. http://www.ep.liu.se/ea/cis/2000/035/. *December 21, 2000.*

This URL will also contain a link to the author's home page.

Abstract

This paper describes a conceptual scheme for classifying conceptual situations from the viewpoint of similarities under a goal concept. As the similarity notion depends on a context, we use a goal concept to specify it. Each situation and the goal is represented as a concept graph from which an explanation of the goal is extracted using a typed domain theory. A notion of abstractions is then used to define what is a valid similarity with respect to the explanation of goal. In a word, given an initial situation and a goal subsuming it, a situation is similar to the initial situation if it is a specialization of some analogue of the initial one. We observe that generalization is also needed to obtain a non-trivial or useful similarity. Based on this observation, we present an experimental result on a system for finding similarities between situations under a goal concept.

Authors' addresses

Makoto Haraguchi and **Yoshiaki Okubo**
Division of Electronics and Information Engineering
Hokkaido University
N-13 W-8, Sapporo 060-9628
Japan

Tokuyasu Kakuta
School of Law
Hokkaido University
N-13 W-7, Sapporo 060-0809
Japan

For technical reasons, this article is stored as two separate computer files, labelled "Part I" and "Part II", respectively. Please replace the present page by a printout of the "Part II" file.