Accepting Inferred Student Solutions by Tutoring System in an Ill-Defined Domain

Abstract

Intelligent Tutoring Systems have made great advances in providing assessment and useful feedback in domains with well-structured problems, where start state, rules, or goals of a problem are well formalized and used to reach an unambiguously correct or incorrect solution. The problems of ill-defined domain often possess multiple solutions. Plausible student solutions of ill-defined problems are deemed wrong by tutoring system if they do not match the known solution accepted by the system. This paper describes a mechanism and the results of a tutoring system in an ill-defined domain such as the English language, for accepting plausible student solutions for ill-defined problems. The WordNet is deployed as a knowledge base, which is a lexical resource of English language database. Semantic similarity measure technique uses WordNet ontology hierarchy to accept the student plausible solutions. The student solutions of cloze passages were evaluated by a group of English experts and compared against a semantic similarity measure. The experts agreed among themselves with a correlation of 0.7 with p