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Abstract

An Online Domain-based Portuguese-Chinese Machine Translation System

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There is a resurgence of interest on online Machine Translation (MT) after web becomes a prime vehicle for disseminating information in multilingual cyberspace. Compared to traditional MT, OnlineMT is a research focusing on both *Multilingual Computing* and *Computational Simulation*. In order to supply a justification for *Multilingual Computing*, computing-free theorems are broached and proven using formal methods in this thesis. Because distributed computing technique is used in most of *Multilingual Computing* systems, a mechanized Hoare logic is proposed and implemented by us to prove the security of distributed computing.

Basing on computing-free theorems, we implement an online domain-based Portuguese-Chinese machine translation system (onlineDBMT). From the point of *Computational Simulation*, onlineDBMT provides an insight into how translation is performed. In the last, a framework for multilingual computing is proposed.

Keywords: multilingual, domain-specific, computing-free, distributed computable