



National University of Science and Technology

Think in Other Terms



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MASTER OF SCIENCE DEGREE IN COMPUTER SCIENCE

NAME

VUSUMUZI MAPHOSA

STUDENT ID

N0085120J

SUPERVISOR

MR K CHILUMANI

CO-SUPERVISOR

MRS S MOYO

**TOPIC: Schema matching in disparate ontologies using a hybrid versatile
graph matching algorithm.**



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ABSTRACT

with my sincere gratitude and appreciation

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In the past decades, the volume of information and knowledge available on the World Wide Web (WWW) has reached enormous quantities and will keep on growing. As new Information Technology equipment is being developed and Internet access improves day after day, information and knowledge production will continuously be on the rise. An ever growing and emerging problem of critical importance is the efficient retrieval and reuse of this knowledge and information. As a result new information structuring frameworks, such as ontologies, are required to assist in restructuring information available on the Web and other sources to enable easy access and use of such information. The system developed here, utilises a hybrid versatile graph matching algorithm which takes two graphs (ontologies, schemas, catalogs, or other data structures) as input, and produces as output a mapping between corresponding nodes of the graphs. The process begins by comparing corresponding main classes between ontologies and traversing subclasses until there are no nodes or subclasses to compare to. Matching also involve analysing ontology properties and relations. Matching elements of two data schemas or two data instances plays a key role in data warehousing, e-business and data mining applications. After the system has performed the initial matching, we expect the domain expert to verify the results and in some cases adjust the results and cater for instances where the system will have missed. When ontologies are matched, they can be merged and queries can be performed transparently by treating them as one source.

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