

# Contents

<b>1</b>	<b>Introduction</b> .....	1
1.1	Introduction .....	1
	References .....	3
<b>2</b>	<b>Concepts</b> .....	5
2.1	Definition .....	5
2.1.1	Explicit Concept Definitions .....	6
2.1.2	Implicit Concept Definitions .....	9
2.2	Organization .....	11
2.2.1	Relationships Among Concepts .....	12
2.2.2	Graphical Organizations .....	14
2.2.3	Specific Organizations of Concepts .....	15
2.3	Concept Use .....	19
2.3.1	KeyConcept .....	20
2.3.2	Automated Generated Thesaurus Approach .....	21
2.3.3	Semantic Web .....	22
	References .....	25
<b>3</b>	<b>Ontologies</b> .....	29
3.1	Definition .....	29
3.2	Organization .....	31
3.2.1	Ontology Components .....	31
3.2.2	Types of Ontologies .....	31
3.2.3	Languages, Tools and Methods for Organizing Ontologies .....	32
3.3	Ontology Use .....	34
3.3.1	Software Agents .....	34
3.3.2	Natural Language Processing .....	36
3.3.3	Media Content Annotation .....	40
3.3.4	Knowledge Extraction .....	42
	References .....	44

<b>4 Knowledge Representation</b> . . . . .	47
4.1 Definition of Knowledge . . . . .	47
4.2 Representing and Organizing Knowledge . . . . .	49
4.2.1 Knowledge Representation . . . . .	49
4.2.2 Knowledge Organization . . . . .	51
4.3 Knowledge Use . . . . .	54
4.3.1 Knowledge Acquisition . . . . .	55
4.3.2 Knowledge Modeling . . . . .	55
4.3.3 Reasoning . . . . .	57
4.3.4 Applications of Knowledge-Based Systems . . . . .	58
References . . . . .	60
<b>5 Trends and Outlook</b> . . . . .	63
References . . . . .	66