



**ВАРНЕНСКИ
СВОБОДЕН
УНИВЕРСИТЕТ
ЧЕРНОРИЗЕЦ ХРАБЪР**

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Ontology-based Model for Human Resources Recruitment

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a

(matching),

(job

seeker ontology)

(job description ontology),

(skills ontology);

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1	13
1.1	13
1.1.1	16
1.2	22
1.2.1	24
1.2.2	26
1.3	28
1.4	31
1.4.1	31
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2.3		71
	3	72
3.1		72
3.2		73
3.2.1		73
3.3		80
3.4		91
3.4.1		91
		100
		109
		112
		113

III.

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1.1

1.1.1

1.1.1

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[12] :

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Facebook, Instagram Twitter.
[45] [46],
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[45]
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1.4

1.4.1

data mining ().

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1.4.2

(text mining)

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(.)

1.4.3

- (plain)

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1.4.4

(preprocessing)

Tokenization:

(tokens),

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SPARQL
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RDF, OWL

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2.1

2.1.1

World Wide Web (W3C)

Semantic

Web [82].

2.1.2

RDF [84].

2.1.3 RDFS

RDF ,

RDF,

RDF ,
RDF [91].

2.1.4 SPARQL

SPARQL

2.1.5

Jena

Apache Jena

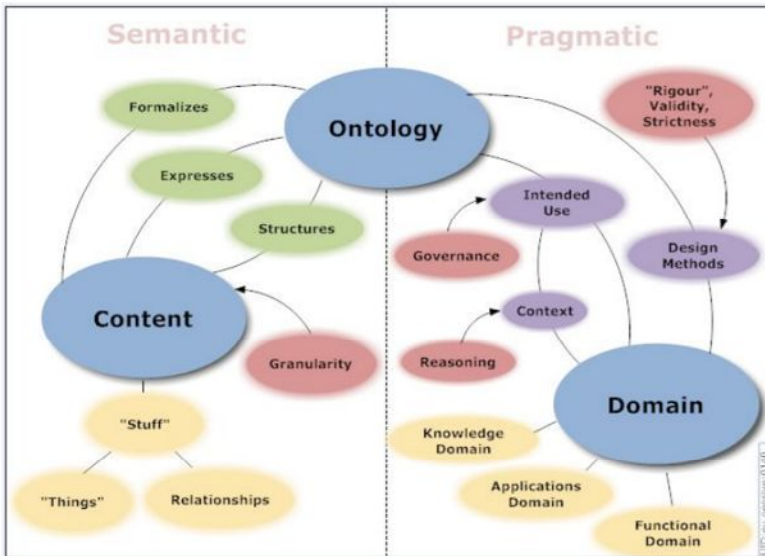
Java-

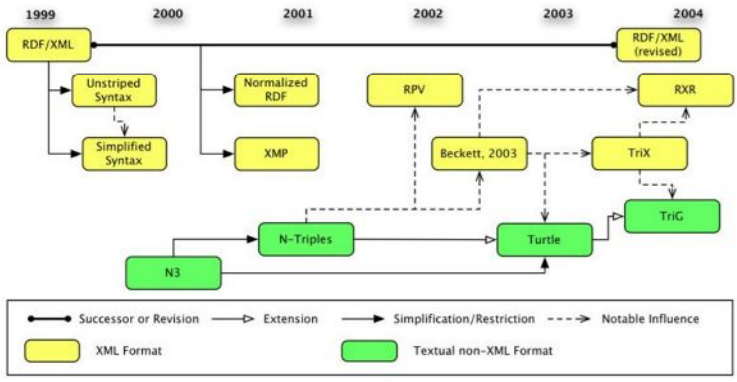
[93].

[95].

2.2.

2.2.1



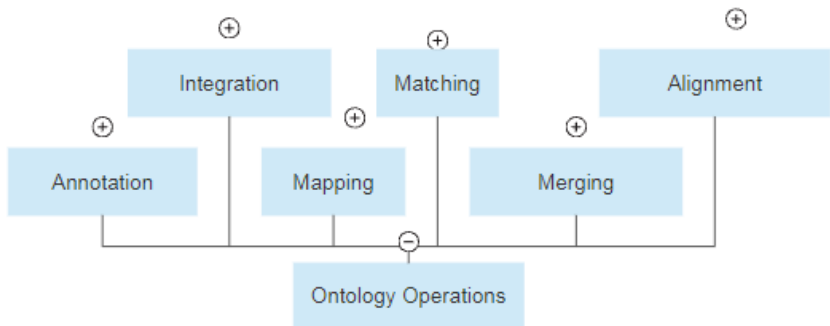


2.2.1.1

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- b- , .
- c- ,
- d- .
- e- .
- f- , ,

2.2.2

[100]



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2.2.2.1

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2.2.2.2 HR

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2.2.3

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2.2.4

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2.2.4.1

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Jaccard

[215].

2.3

HR

3

(ONTARIO)

Ontario

RDF.

Ontario

3.1

RDF

3.2

RDF

RDF

RDF `Ontario.rdfs,`

`SemMF` [216]

3.2.1

RDF

a

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RDF

Ontario.

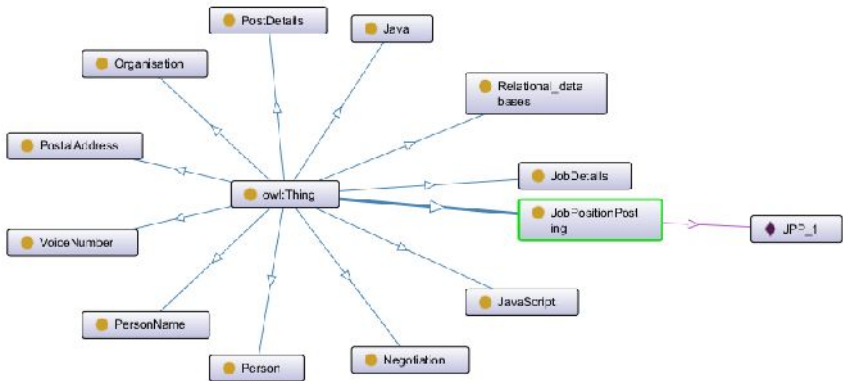
(JPP),

(JPS),

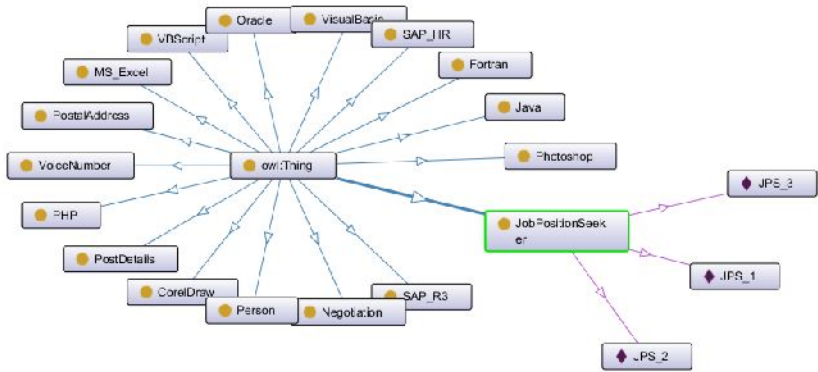
RDF

15

16.



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RDF

Ontario

RDFs

. Jena

RDF

jena.

Ontario.

, URL

Ontario

RDQL

uri

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, (s1, s2)

(s2, s1),

false.

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true false,

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1.

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rdf

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, uri
, uri

O*net [219].

O*net,

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19.

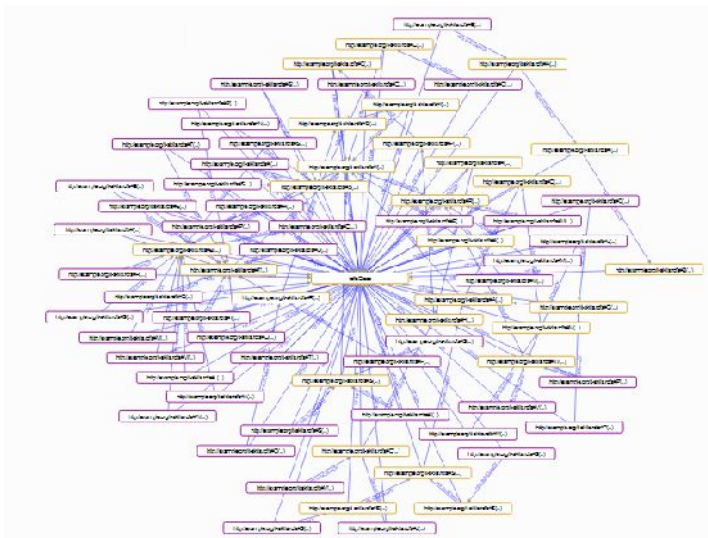
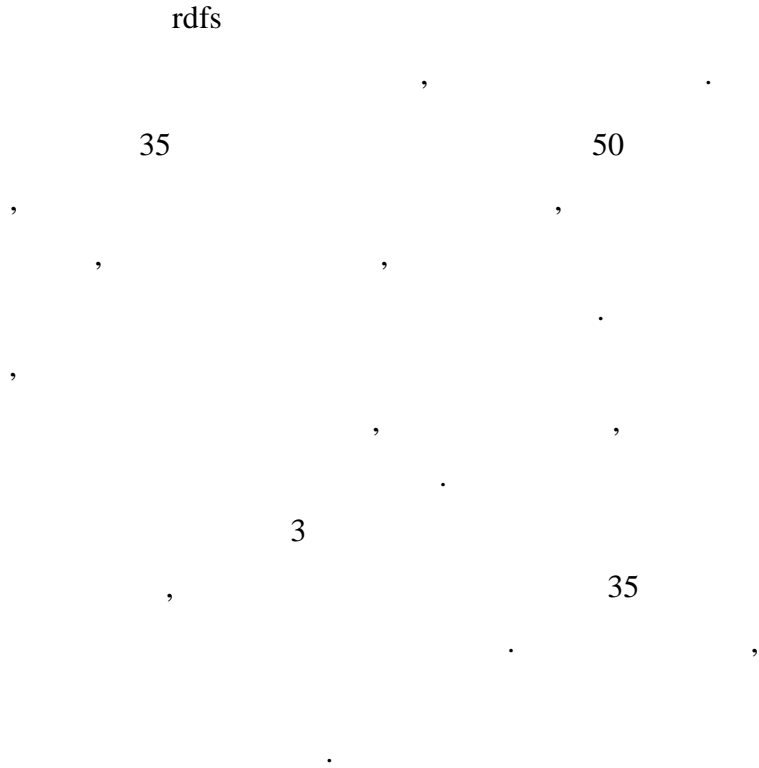


Fig. 19.



3.4

3.4.1

(matchers)

Java

3.4.1.1

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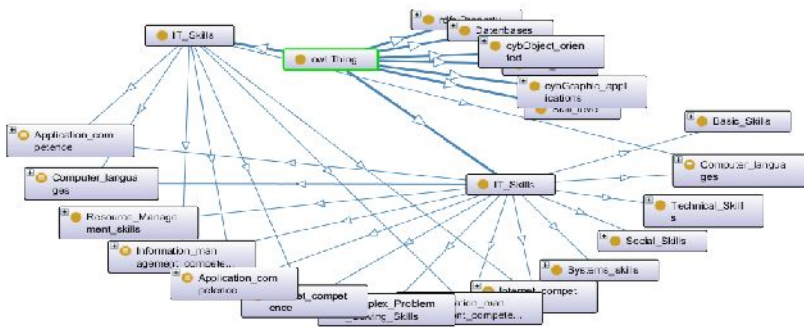
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3.4.1.2

[217].



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Application Competence

Application_competence

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23).

Job details		
Node label :	travel required	Salary
Job desc :	False	40000
Job seeker :	False	35000
Sim :	1.0	1.0
Weight:	0.3	0.7
Similarity: 1.0	Weight : 0.25	

Skills				
sim:	0.350002	1.0	0.85	1.0
weight:	0.25	0.25	0.25	0.25
query prop :	Relational_databases	Negotiation	JavaScript	Negotiation
res prop :	Negotiation	Negotiation	VBScript	Negotiation
prop sim :	0.187	1.0	0.875	1.0
prop	0.8	0.8	0.8	0.8

weight:				
prop label :	skill level	skill level	skill level	skill level
query prop :	Intermediate	Advanced	Expert	Advanced
res prop :	Expert	Expert	Advanced	Expert
prop sim :	1.0	1.0	0.75	1.0
prop weight:	0.2	0.2	0.2	0.2
Similarity : 0.79375005		Weight : 0.75		
Job seeker 1				
Similarity 0.84531254				

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(8).

11.

9, 10

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Rank	Similarity	Job seeker	Status
Rank #1	0.84531254	JPS_1	Shortlisted
Rank #2	0.8184375	JPS_2	Shortlisted
Rank #3	0.8148438	JPS_8	Shortlisted
Rank #4	0.749375	JPS_6	Shortlisted
Rank #5	0.749375	JPS_5	Shortlisted
Rank #6	0.74	JPS_4	Shortlisted
Rank #7	0.674375	JPS_7	Not Shortlisted
Rank #8	0.609375	JPS_10	Not Shortlisted
Rank #9	0.57187504	JPS_9	Not Shortlisted
Rank #10	0.49999997	JPS_3	Not Shortlisted

8.

Rank	Similarity	Job seeker	Status
Rank #1	0.95750004	JPS_2	Shortlisted
Rank #2	0.95000005	JPS_8	Shortlisted
Rank #3	0.865	JPS_6	Shortlisted
Rank #4	0.865	JPS_5	Shortlisted
Rank #5	0.865	JPS_4	Shortlisted
Rank #6	0.82750005	JPS_7	Shortlisted

Rank #7	0.80625	JPS_1	Shortlisted
Rank #8	0.76250005	JPS_10	Shortlisted
Rank #9	0.70000005	JPS_9	Shortlisted
Rank #10	0.53125	JPS_3	Not Shortlisted

9.

Rank	Similarity	Job seeker	Status
Rank #1	0.749375	JPS_6	Shortlisted
Rank #2	0.749375	JPS_5	Shortlisted
Rank #3	0.74	JPS_4	Shortlisted
Rank #4	0.84531254	JPS_1	Shortlisted
Rank #5	0.8184375	JPS_2	Shortlisted
Rank #6	0.57187504	JPS_9	Not Shortlisted
Rank #7	0.8148438	JPS_8	Shortlisted
Rank #8	0.674375	JPS_7	Not Shortlisted
Rank #9	0.609375	JPS_10	Not Shortlisted
Rank #10	0.49999997	JPS_3	Not Shortlisted

10.

Rank	Similarity	Job seeker	Status
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Rank #1	0.95750004	JPS_2	Shortlisted
Rank #2	0.865	JPS_6	Shortlisted
Rank #3	0.865	JPS_5	Shortlisted
Rank #4	0.865	JPS_4	Shortlisted
Rank #5	0.95000005	JPS_8	Shortlisted
Rank #6	0.70000005	JPS_9	Shortlisted
Rank #7	0.82750005	JPS_7	Shortlisted
Rank #8	0.76250005	JPS_10	Shortlisted
Rank #9	0.80625	JPS_1	Shortlisted
Rank #10	0.53125	JPS_3	Not Shortlisted

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IV.

IV. 1. -

IV. 1. 1. ,

IV. 1. 2. ,

IV. 1. 3.

IV. 1. 4.

IV.2.

IV.2.1. ,

IV.2.2.

V. ,

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3. Maroun, M. (2022). Ontology-based Approach in Digital Healthcare Recruitment, Applications of Mathematics in Engineering and Economics (AMEE'21) AIP Conf. Proc. 2505; AIP Publishing (accepted)