Inference for SRL Report

Capita Selecta AI (Probabilistic Programming) 2016-2017

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I. Probabilistic Inference Using Weighted Model Counting

A. PGM to CNF

Not sure if the 6th clause of the network variable A in IV is correctly substituted due to the property describe in the paper "Consider again Figure 1 and imagine that the parameter $\theta c1|a1$ were 0. Given that this parameter is known to be 0, all models that set this parameter variable to true will have weight 0."

For VII, should we also chance the closure that contains a probability of 0, like we did in the ENC1 encoding? Look comment above

Tables I and II show the logical variables used for encoded the Bayesian Network in [1].

Tables III and IV represent the encoded Bayesian Network using ENC1 and table V contains the corresponding weights.

Likewise, tables VI and VII represent the encoded Bayesian Network using ENC2 and table VIII contains the corresponding weights.

References

[1] Bayesian networks.

Table I. Logical variables using ENC1

Network variables	Indicator Variable	CTP
B	λ_{b1}, λ_{b2}	θ_{b1}, θ_{b2}
E	λ_{e1}, λ_{e2}, λ_3	θ_{e1}, θ_{e2}, θ_3
A	λ_{a1}, λ_{a2}	$\theta_{a1\|b1,e1}$, $\theta_{a1\|b1,e2}$,$\theta_{a1\|b1,e3}$, $\theta_{a1\|b2,e1}$, $\theta_{a1\|b2,e2}$, $\theta_{a1\|b2,e3}$, $\theta_{a2\|b1,e1}$, $\theta_{a2\|b1,e2}$,$\theta_{a2\|b1,e3}$, $\theta_{a2\|b2,e1}$, $\theta_{a2\|b2,e2}$, $\theta_{a2\|b2,e3}$
J	λ_{j1}, λ_{j2}	$\theta_{j1\|a1}$, $\theta_{j2\|a1}$, $\theta_{j1\|a2}$, $\theta_{j2\|a2}$
M	λ_{m1}, λ_{m2}	$\theta_{m1\|a1}$, $\theta_{m2\|a1}$,$\theta_{m1\|a2}$, $\theta_{m2\|a2}$

Table II. Indicator variables using ENC2

Variables	Indicator Variable	CTP
B	λ_{b1}, λ_{b2}	ρ_{b1}
E	λ_{e1}, λ_{e2}, λ_3	ρ_{e1}, ρ_{e2}
A	λ_{a1}, λ_{a2}	$\rho_{a1\|b1,c1}$, $\rho_{a1\|b1,c2}$, $\rho_{a1\|b1,c3}$, $\rho_{a1\|b2,c1}$, $\rho_{a1\|b2,c2}$, $\rho_{a1\|b2,c3}$
J	λ_{j1}, λ_{j2}	$\rho_{j1\|a1}$, $\rho_{j1\|a2}$
M	λ_{m1}, λ_{m2}	$\rho_{m1\|a1}$, $\rho_{m1\|a2}$

Table III. CNF REPRESENTATION OF Δ USING ENC1

Variables	CNF	
B	$\lambda_{b1} \vee \lambda_{b2}$	$\lambda_{b1} \Leftrightarrow \theta_{b1}$
	$\neg\lambda_{b1} \vee \neg\lambda_{b2}$	$\lambda_{b2} \Leftrightarrow \theta_{b2}$
E	$\lambda_{e1} \vee \lambda_{e2} \vee \lambda_{e3}$	$\lambda_{e1} \Leftrightarrow \theta_{e1}$
	$\neg\lambda_{e1} \vee \neg\lambda_{e2}$	$\lambda_{e2} \Leftrightarrow \theta_{e2}$
	$\neg\lambda_{e1} \vee \neg\lambda_{e3}$	$\lambda_{e3} \Leftrightarrow \theta_{e3}$
	$\neg\lambda_{e2} \vee \neg\lambda_{e3}$	
A	$\lambda_{a1} \vee \lambda_{a2}$	$\lambda_{a1} \wedge \lambda_{b1} \wedge \lambda_{e1} \Leftrightarrow \theta_{a1\|b1,e1}$
	$\neg\lambda_{a1} \vee \neg\lambda_{a2}$	$\lambda_{a1} \wedge \lambda_{b1} \wedge \lambda_{e2} \Leftrightarrow \theta_{a1\|b1,e2}$
		$\lambda_{a1} \wedge \lambda_{b1} \wedge \lambda_{e3} \Leftrightarrow \theta_{a1\|b1,e3}$
		$\lambda_{a1} \wedge \lambda_{b2} \wedge \lambda_{e1} \Leftrightarrow \theta_{a1\|b2,e1}$
		$\lambda_{a1} \wedge \lambda_{b2} \wedge \lambda_{e2} \Leftrightarrow \theta_{a1\|b2,e2}$
		$\lambda_{a1} \wedge \lambda_{b2} \wedge \lambda_{e3} \Leftrightarrow \theta_{a1\|b2,e3}$
		$\lambda_{a2} \wedge \lambda_{b1} \wedge \lambda_{e1} \Leftrightarrow \theta_{a1\|b1,e1}$
		$\lambda_{a2} \wedge \lambda_{b1} \wedge \lambda_{e2} \Leftrightarrow \theta_{a1\|b1,e2}$
		$\lambda_{a2} \wedge \lambda_{b1} \wedge \lambda_{e3} \Leftrightarrow \theta_{a1\|b1,e3}$
		$\lambda_{a2} \wedge \lambda_{b2} \wedge \lambda_{e1} \Leftrightarrow \theta_{a1\|b2,e1}$
		$\lambda_{a2} \wedge \lambda_{b2} \wedge \lambda_{e2} \Leftrightarrow \theta_{a1\|b2,e2}$
		$\lambda_{a2} \wedge \lambda_{b2} \wedge \lambda_{e3} \Leftrightarrow \theta_{a1\|b2,e3}$
J	$\lambda_{j1} \vee \lambda_{j2}$	$\lambda_{j1} \wedge \lambda_{a1} \Leftrightarrow \theta_{j1\|a1}$
	$\neg\lambda_{j1} \vee \neg\lambda_{j2}$	$\lambda_{j1} \wedge \lambda_{a2} \Leftrightarrow \theta_{j1\|a2}$
		$\lambda_{j2} \wedge \lambda_{a1} \Leftrightarrow \theta_{j2\|a1}$
		$\lambda_{j2} \wedge \lambda_{a2} \Leftrightarrow \theta_{j2\|a2}$
M	$\lambda_{m1} \vee \lambda_{m2}$	$\lambda_{m1} \wedge \lambda_{a1} \Leftrightarrow \theta_{m1\|a1}$
	$\neg\lambda_{m1} \vee \neg\lambda_{m2}$	$\lambda_{m1} \wedge \lambda_{a2} \Leftrightarrow \theta_{m1\|a2}$
		$\lambda_{m2} \wedge \lambda_{a1} \Leftrightarrow \theta_{m2\|a1}$
		$\lambda_{m2} \wedge \lambda_{a2} \Leftrightarrow \theta_{m2\|a2}$

Table IV. BAYESIAN NETWORK ENCODED USING ENC1

Network variable	Indicator Clauses	ENC1 Parameter Clauses
B	$\lambda_{b1} \vee \lambda_{b2}$,	$\lambda_{b1} \Rightarrow \theta_{b1}$, $\theta_{b1} \Rightarrow \lambda_{b1}$
	$\neg\lambda_{b1} \vee \neg\lambda_{b2}$	$\lambda_{b2} \Rightarrow \theta_{b2}$, $\theta_{b2} \Rightarrow \lambda_{b2}$
E	$\lambda_{e1} \vee \lambda_{e2} \vee \lambda_{e3}$,	$\lambda_{e1} \Rightarrow \theta_{e1}$, $\theta_{e1} \Rightarrow \lambda_{e1}$
	$\neg\lambda_{e1} \vee \neg\lambda_{e2}$,	$\lambda_{e2} \Rightarrow \theta_{e2}$, $\theta_{e2} \Rightarrow \lambda_{e2}$
	$\neg\lambda_{e1} \vee \neg\lambda_{e3}$,	$\lambda_{e3} \Rightarrow \theta_{e3}$, $\theta_{e3} \Rightarrow \lambda_{e3}$
	$\neg\lambda_{e2} \vee \neg\lambda_{e3}$	
A	$\lambda_{a1} \vee \lambda_{a2}$,	$\lambda_{a1} \wedge \lambda_{b1} \wedge \lambda_{e1}, \Rightarrow \theta_{a1\|b1,e1}$, $\theta_{a1\|b1,e1} \Rightarrow \lambda_{a1}$, $\theta_{a1\|b1,e1} \Rightarrow \lambda_{b1}$, $\theta_{a1\|b1,e1} \Rightarrow \lambda_{e1}$
	$\neg\lambda_{a1} \vee \neg\lambda_{a2}$	$\lambda_{a1} \wedge \lambda_{b1} \wedge \lambda_{e2}, \Rightarrow \theta_{a1\|b1,e2}$, $\theta_{a1\|b1,e2} \Rightarrow \lambda_{a1}$, $\theta_{a1\|b1,e2} \Rightarrow \lambda_{b1}$, $\theta_{a1\|b1,e2} \Rightarrow \lambda_{e2}$
		$\lambda_{a1} \wedge \lambda_{b1} \wedge \lambda_{e3}, \Rightarrow \theta_{a1\|b1,e3}$, $\theta_{a1\|b1,e3} \Rightarrow \lambda_{a1}$, $\theta_{a1\|b1,e3} \Rightarrow \lambda_{b1}$, $\theta_{a1\|b1,e3} \Rightarrow \lambda_{e3}$
		$\lambda_{a1} \wedge \lambda_{b2} \wedge \lambda_{e1}, \Rightarrow \theta_{a1\|b2,e1}$, $\theta_{a1\|b2,e1} \Rightarrow \lambda_{a1}$, $\theta_{a1\|b2,e1} \Rightarrow \lambda_{b2}$, $\theta_{a1\|b2,e1} \Rightarrow \lambda_{e1}$
		$\lambda_{a1} \wedge \lambda_{b2} \wedge \lambda_{e2}, \Rightarrow \theta_{a1\|b2,e2}$, $\theta_{a1\|b2,e2} \Rightarrow \lambda_{a1}$, $\theta_{a1\|b2,e2} \Rightarrow \lambda_{b2}$, $\theta_{a1\|b2,e2} \Rightarrow \lambda_{e2}$
		$\neg\lambda_{a1} \vee \neg\lambda_{b2} \vee \neg\lambda_{c3}$
		$\lambda_{a2} \wedge \lambda_{b1} \wedge \lambda_{e1}, \Rightarrow \theta_{a2\|b1,e1}$, $\theta_{a2\|b1,e1} \Rightarrow \lambda_{a2}$, $\theta_{a2\|b1,e1} \Rightarrow \lambda_{b1}$, $\theta_{a2\|b1,e1} \Rightarrow \lambda_{e1}$
		$\lambda_{a2} \wedge \lambda_{b1} \wedge \lambda_{e2}, \Rightarrow \theta_{a2\|b1,e2}$, $\theta_{a2\|b1,e2} \Rightarrow \lambda_{a2}$, $\theta_{a2\|b1,e2} \Rightarrow \lambda_{b1}$, $\theta_{a2\|b1,e2} \Rightarrow \lambda_{e2}$
		$\lambda_{a2} \wedge \lambda_{b1} \wedge \lambda_{e3}, \Rightarrow \theta_{a2\|b1,e3}$, $\theta_{a2\|b1,e3} \Rightarrow \lambda_{a2}$, $\theta_{a2\|b1,e3} \Rightarrow \lambda_{b1}$, $\theta_{a2\|b1,e3} \Rightarrow \lambda_{e3}$
		$\lambda_{a2} \wedge \lambda_{b2} \wedge \lambda_{e1}, \Rightarrow \theta_{a2\|b2,e1}$, $\theta_{a2\|b2,e1} \Rightarrow \lambda_{a2}$, $\theta_{a2\|b2,e1} \Rightarrow \lambda_{b2}$, $\theta_{a2\|b2,e1} \Rightarrow \lambda_{e1}$
		$\lambda_{a2} \wedge \lambda_{b2} \wedge \lambda_{e2}, \Rightarrow \theta_{a2\|b2,e2}$, $\theta_{a2\|b2,e2} \Rightarrow \lambda_{a2}$, $\theta_{a2\|b2,e2} \Rightarrow \lambda_{b2}$, $\theta_{a2\|b2,e2} \Rightarrow \lambda_{e2}$
		$\lambda_{a2} \wedge \lambda_{b2} \wedge \lambda_{e3}, \Rightarrow \theta_{a2\|b2,e3}$, $\theta_{a2\|b2,e3} \Rightarrow \lambda_{a2}$, $\theta_{a2\|b2,e3} \Rightarrow \lambda_{b2}$, $\theta_{a2\|b2,e3} \Rightarrow \lambda_{e3}$
J	$\lambda_{j1} \vee \lambda_{j2}$,	$\lambda_{j1} \wedge \lambda_{a1} \Rightarrow \theta_{j1\|a1}$, $\theta_{j1\|a1} \Rightarrow \lambda_{j1}$, $\theta_{j1\|a1} \Rightarrow \lambda_{a1}$
	$\neg\lambda_{j1} \vee \neg\lambda_{j2}$	$\lambda_{j1} \wedge \lambda_{a2} \Rightarrow \theta_{j1\|a2}$, $\theta_{j1\|a2} \Rightarrow \lambda_{j1}$, $\theta_{j1\|a2} \Rightarrow \lambda_{a2}$
		$\lambda_{j2} \wedge \lambda_{a1} \Rightarrow \theta_{j2\|a1}$, $\theta_{j2\|a1} \Rightarrow \lambda_{j2}$, $\theta_{j2\|a1} \Rightarrow \lambda_{a1}$
		$\lambda_{j2} \wedge \lambda_{a2} \Rightarrow \theta_{j2\|a2}$, $\theta_{j2\|a2} \Rightarrow \lambda_{j2}$, $\theta_{j2\|a2} \Rightarrow \lambda_{a2}$
M	$\lambda_{m1} \vee \lambda_{m2}$,	$\lambda_{m1} \wedge \lambda_{a1} \Rightarrow \theta_{m1\|a1}$, $\theta_{m1\|a1} \Rightarrow \lambda_{m1}$, $\theta_{m1\|a1} \Rightarrow \lambda_{a1}$
	$\neg\lambda_{m1} \vee \neg\lambda_{m2}$	$\lambda_{m1} \wedge \lambda_{a2} \Rightarrow \theta_{m1\|a2}$, $\theta_{m1\|a2} \Rightarrow \lambda_{m1}$, $\theta_{m1\|a2} \Rightarrow \lambda_{a2}$
		$\lambda_{m2} \wedge \lambda_{a1} \Rightarrow \theta_{m2\|a1}$, $\theta_{m2\|a1} \Rightarrow \lambda_{m2}$, $\theta_{m2\|a1} \Rightarrow \lambda_{a1}$
		$\lambda_{m2} \wedge \lambda_{a2} \Rightarrow \theta_{m2\|a2}$, $\theta_{m2\|a2} \Rightarrow \lambda_{m2}$, $\theta_{m2\|a2} \Rightarrow \lambda_{a2}$

Table V. WEIGHTS ASSOCIATION USING ENC1 WHERE MISSING WEIGHTS ARE SET TO ONE

Weights	Value
$\mathrm{W}(\theta_{b1})$	0.7
$\mathrm{W}(\theta_{b2})$	0.3
$\mathrm{W}(\theta_{e1})$	0.01
$\mathrm{W}(\theta_{e2})$	0.19
$\mathrm{W}(\theta_{e3})$	0.80
$\mathrm{W}(\theta_{a1\|b1,e1})$	0.90
$\mathrm{W}(\theta_{a1\|b1,e2})$	0.85
$\mathrm{W}(\theta_{a1\|b1,e3})$	0.80
$\mathrm{W}(\theta_{a1\|b2,e1})$	0.30
$\mathrm{W}(\theta_{a1\|b2,e2})$	0.10
$\mathrm{W}(\theta_{a1\|b2,e3})$	0
$\mathrm{W}(\theta_{a2\|b1,e1})$	0.10
$\mathrm{W}(\theta_{a2\|b1,e2})$	0.15
$\mathrm{W}(\theta_{a2\|b1,e3})$	0.20
$\mathrm{W}(\theta_{a2\|b2,e1})$	0.70
$\mathrm{W}(\theta_{a2\|b2,e2})$	0.90
$\mathrm{W}(\theta_{j1\|a1})$	0.80
$\mathrm{W}(\theta_{j1\|a2})$	0.10
$\mathrm{W}(\theta_{j2\|a1})$	0.20
$\mathrm{W}(\theta_{j2\|a2})$	0.90
$\mathrm{W}(\theta_{m1\|a1})$	0.80
$\mathrm{W}(\theta_{m1\|a2})$	0.10
$\mathrm{W}(\theta_{m2\|a1})$	0.20
$\mathrm{W}(\theta_{m2\|a2})$	0.90

Table VI. CNF REPRESENTATION OF Δ USING ENC2

Variables	CNF	
B	$\lambda_{b1} \vee \lambda_{b2}$	$\rho_{b1} \Rightarrow \lambda_{b1}$
	$\neg\lambda_{b1} \vee \neg\lambda_{b2}$	$\neg\rho_{b1} \Rightarrow \lambda_{b2}$
E	$\lambda_{e1} \vee \lambda_{e2} \vee \lambda_{e3}$	$\rho_{e1} \Rightarrow \lambda_{e1}$
	$\neg\lambda_{e1} \vee \neg\lambda_{e2}$	$\neg\rho_{e1} \wedge \rho_{e2} \Rightarrow \lambda_{e2}$
	$\neg\lambda_{e1} \vee \neg\lambda_{e3}$	$\neg\rho_{e1} \wedge \neg\rho_{e2} \Rightarrow \lambda_{e3}$
	$\neg\lambda_{e2} \vee \neg\lambda_{e3}$	
A	$\lambda_{a1} \vee \lambda_{a2}$	$\lambda_{b1} \wedge \lambda_{c1} \wedge \rho_{a1\|b1,c1} \Rightarrow \lambda_{a1}$
	$\neg\lambda_{a1} \vee \neg\lambda_{a2}$	$\lambda_{b1} \wedge \lambda_{c2} \wedge \rho_{a1\|b1,c2} \Rightarrow \lambda_{a1}$
		$\lambda_{b1} \wedge \lambda_{c3} \wedge \rho_{a1\|b1,c3} \Rightarrow \lambda_{a1}$
		$\lambda_{b2} \wedge \lambda_{c1} \wedge \rho_{a1\|b2,c1} \Rightarrow \lambda_{a1}$
		$\lambda_{b2} \wedge \lambda_{c2} \wedge \rho_{a1\|b2,c2} \Rightarrow \lambda_{a1}$
		$\lambda_{b2} \wedge \lambda_{c3} \wedge \rho_{a1\|b2,c3} \Rightarrow \lambda_{a1}$
		$\lambda_{b1} \wedge \lambda_{c1} \wedge \neg\rho_{a1\|b1,c1} \Rightarrow \lambda_{a2}$
		$\lambda_{b1} \wedge \lambda_{c2} \wedge \neg\rho_{a1\|b1,c2} \Rightarrow \lambda_{a2}$
		$\lambda_{b1} \wedge \lambda_{c3} \wedge \neg\rho_{a1\|b1,c3} \Rightarrow \lambda_{a2}$
		$\lambda_{b2} \wedge \lambda_{c1} \wedge \neg\rho_{a1\|b2,c1} \Rightarrow \lambda_{a2}$
		$\lambda_{b2} \wedge \lambda_{c2} \wedge \neg\rho_{a1\|b2,c2} \Rightarrow \lambda_{a2}$
		$\lambda_{b2} \wedge \lambda_{c3} \wedge \neg\rho_{a1\|b2,c3} \Rightarrow \lambda_{a2}$
J	$\lambda_{j1} \vee \lambda_{j2}$	$\lambda_{a1} \wedge \rho_{j1\|a1} \Rightarrow \lambda_{j1}$
	$\neg\lambda_{j1} \vee \neg\lambda_{j2}$	$\lambda_{a2} \wedge \rho_{j1\|a2} \Rightarrow \lambda_{j1}$
		$\lambda_{a1} \wedge \neg\rho_{j1\|a1} \Rightarrow \lambda_{j2}$
		$\lambda_{a2} \wedge \neg\rho_{j1\|a2} \Rightarrow \lambda_{j2}$
M	$\lambda_{m1} \vee \lambda_{m2}$	$\lambda_{a1} \wedge \rho_{m1\|a1} \Rightarrow \lambda_{m1}$
	$\neg\lambda_{m1} \vee \neg\lambda_{m2}$	$\lambda_{a2} \wedge \rho_{m1\|a2} \Rightarrow \lambda_{m1}$
		$\lambda_{a1} \wedge \neg\rho_{m1\|a1} \Rightarrow \lambda_{m2}$
		$\lambda_{a2} \wedge \neg\rho_{m1\|a2} \Rightarrow \lambda_{m2}$

Table VII. BAYESIAN NETWORK ENCODED USING ENC2

Network variable	Indicator Clauses	ENC1 Parameter Clauses
B	$\lambda_{b1} \vee \lambda_{b2}$, $\neg\lambda_{b1} \vee \neg\lambda_{b2}$	$\rho_{b1} \Rightarrow \lambda_{b1}$ $\neg\rho_{b1} \Rightarrow \lambda_{b2}$
E	$\lambda_{e1} \vee \lambda_{e2} \vee \lambda_{e3}$, $\neg\lambda_{e1} \vee \neg\lambda_{e2}$, $\neg\lambda_{e1} \vee \neg\lambda_{e3}$, $\neg\lambda_{e2} \vee \neg\lambda_{e3}$	$\rho_{e1} \Rightarrow \lambda_{e1}$ $\neg\rho_{e1} \wedge \rho_{e2} \Rightarrow \lambda_{e2}$ $\neg\rho_{e1} \wedge \neg\rho_{e2} \Rightarrow \lambda_{e3}$
A	$\lambda_{a1} \vee \lambda_{a2}$, $\neg\lambda_{a1} \vee \neg\lambda_{a2}$	$\lambda_{b1} \wedge \lambda_{e1} \wedge \rho_{a1\|b1,e1} \Rightarrow \lambda_{a1}$ $\lambda_{b1} \wedge \lambda_{e2} \wedge \rho_{a1\|b1,e2} \Rightarrow \lambda_{a1}$ $\lambda_{b1} \wedge \lambda_{e3} \wedge \rho_{a1\|b1,e3} \Rightarrow \lambda_{a1}$ $\lambda_{b2} \wedge \lambda_{e1} \wedge \rho_{a1\|b2,e1} \Rightarrow \lambda_{a1}$ $\lambda_{b2} \wedge \lambda_{e2} \wedge \rho_{a1\|b2,e2} \Rightarrow \lambda_{a1}$ $\lambda_{b2} \wedge \lambda_{e3} \wedge \rho_{a1\|b2,e3} \Rightarrow \lambda_{a1}$ $\lambda_{b1} \wedge \lambda_{e1} \wedge \neg\rho_{a1\|b1,e1} \Rightarrow \lambda_{a2}$ $\lambda_{b1} \wedge \lambda_{e2} \wedge \neg\rho_{a1\|b1,e2} \Rightarrow \lambda_{a2}$ $\lambda_{b1} \wedge \lambda_{e3} \wedge \neg\rho_{a1\|b1,e3} \Rightarrow \lambda_{a2}$ $\lambda_{b2} \wedge \lambda_{e1} \wedge \neg\rho_{a1\|b2,e1} \Rightarrow \lambda_{a2}$ $\lambda_{b2} \wedge \lambda_{e2} \wedge \neg\rho_{a1\|b2,e2} \Rightarrow \lambda_{a2}$ $\lambda_{b2} \wedge \lambda_{e3} \wedge \neg\rho_{a1\|b2,e3} \Rightarrow \lambda_{a2}$
J	$\lambda_{j1} \vee \lambda_{j2}$, $\neg\lambda_{j1} \vee \neg\lambda_{j2}$	$\lambda_{a1} \wedge \rho_{j1\|a1} \Rightarrow \lambda_{j1}$ $\lambda_{a2} \wedge \rho_{j1\|a2} \Rightarrow \lambda_{j1}$ $\lambda_{a1} \wedge \neg\rho_{j1\|a1} \Rightarrow \lambda_{j2}$ $\lambda_{a2} \wedge \neg\rho_{j1\|a2} \Rightarrow \lambda_{j2}$
M	$\lambda_{m1} \vee \lambda_{m2}$, $\neg\lambda_{m1} \vee \neg\lambda_{m2}$	$\lambda_{a1} \wedge \rho_{m1\|a1} \Rightarrow \lambda_{m1}$ $\lambda_{a2} \wedge \rho_{m1\|a2} \Rightarrow \lambda_{m1}$ $\lambda_{a1} \wedge \neg\rho_{m1\|a1} \Rightarrow \lambda_{m2}$ $\lambda_{a2} \wedge \neg\rho_{m1\|a2} \Rightarrow \lambda_{m2}$

Table VIII. WEIGHTS ASSOCIATION USING ENC2 WHERE MISSING WEIGHTS ARE SET TO ONE

Weights	Value
W(ρ_{b1})	0.7
W($\neg\rho_{b1}$)	0.3
W(ρ_{e1})	0.01
W(ρ_{e2})	0.19/(1-0.01) = 0.19
W($\neg\rho_{e1}$)	1-0.01 = 0.99
W($\neg\rho_{e2}$)	1-0.01 = 0.81
W($\rho_{a1\|b1,e1}$)	0.90
W($\neg\rho_{a1\|b1,e1}$)	1-0.90=0.10
W($\rho_{a1\|b1,e2}$)	0.85
W($\neg\rho_{a1\|b1,e2}$)	1-0.85=0.15
W($\rho_{a1\|b1,e3}$)	0.80
W($\neg\rho_{a1\|b1,e3}$)	1-0.80=0.20
W($\rho_{a1\|b2,e1}$)	0.30
W($\neg\rho_{a1\|b2,e1}$)	1-0.30=0.70
W($\rho_{a1\|b2,e2}$)	0.10
W($\neg\rho_{a1\|b2,e2}$)	1-0-10=0.90
W($\rho_{a1\|b2,e3}$)	0
W($\neg\rho_{a1\|b2,e3}$)	1-0=1
W($\rho_{j1\|a1}$)	0.80
W($\neg\rho_{j1\|a1}$)	1-0.80=0.20
W($\rho_{j1\|a2}$)	0.10
W($\neg\rho_{j1\|a2}$)	1-0.10=0.90