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[2]

[4]

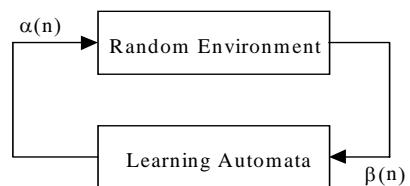
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[3]

()

[7]

[3]



$$\alpha = \{\alpha_1, \alpha_2, \dots, \alpha_r\}$$

β

β(n) S

$$E \equiv \{\alpha, \beta, c\}$$

$$c \equiv \{c_1, c_2, \dots, c_r\}$$

$$\beta_s = 0$$

$$\beta_1 = 1$$

2

$$\beta \equiv \{\beta_1, \beta_2, \dots, \beta_m\}$$

P

$$\beta(n) \in Q$$

[0,1]

¹ Learning Automata ² Environment

c_i

α_i

c_i

$\{\alpha, \beta, F, G, \phi\}$

$\phi \equiv \{\phi_1, \phi_2, \dots, \phi_s\}$

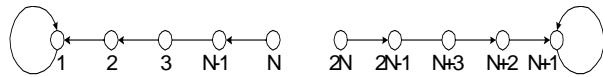
$\beta \equiv \{\beta_1, \beta_2, \dots, \beta_m\}$

$\alpha \equiv \{\alpha_1, \alpha_2, \dots, \alpha_r\}$

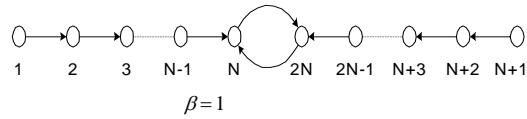
$F: \phi \rightarrow \alpha$

$F: \phi \times \beta \rightarrow \phi$

$L_{2N,2}$



$\beta=0$



$\beta=1$

$L_{2N,2}$

Krylov

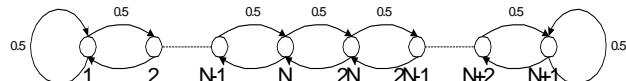
ϕ_{i-1}

/

ϕ_{i+1}

/

$\phi_i (i \neq 1, N, N+1, 2N)$



$\beta=1$

Krylov

$\{\alpha, \beta, p, T\}$

$p \equiv \{p_1, p_2, \dots, p_r\}$

$\beta \equiv \{\beta_1, \beta_2, \dots, \beta_m\}$

$\alpha \equiv \{\alpha_1, \alpha_2, \dots, \alpha_r\}$

$p(n+1) = T[\alpha(n), \beta(n), p(n)]$

$p_i(n)$

n

α_i

$p_i(n)$

$p_i(n)$

[4]

$$p_i(n+1) = p_i(n) + a[1 - p_i(n)]$$

$$p_j(n+1) = (1-a)p_j(n) \quad j \neq i \quad \forall j$$

$$p_i(n+1) = (1-b)p_i(n)$$

³ Unfavorable

⁴ Stationary

⁵ Non-Stationary

⁶ Fixed Structure

¹ Actions

² Variable Structure

$$p_j(n+1) = \frac{b}{r-1} + (1-b)p_j(n) \quad \forall j \quad j \neq i$$

a	b a	b	a
b	L_{RdP}	L_{RP}	b
[11-15]	a b	L_{RI}	

[6]

[2,6]

()

()

()

)
 L_{RP} (

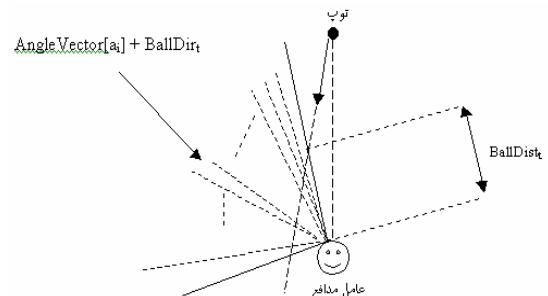
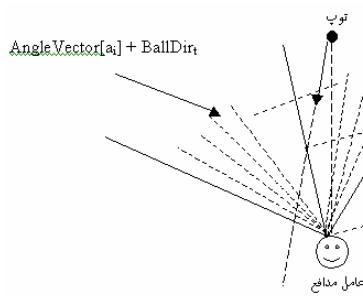
L_{RP} L_{RI}

³Linear Reward Pealty
⁴Linear Reward Epsilon Penalty
⁵Linear Reward Inaction
 Ball Distance
 Ball Direction

$$(\quad) \quad) (\quad)$$

. [6]

Pentium III 500



L_{RI}

L_{RI}

L_{RI}

/

L_{RI}

%	%	%	%	%	%	
%	%	%	%	%	%	

L_{RI}

/	/	/	/	/	/	
%	%	%	%	%	%	
%	%	%	%	%	%	

L_{RP}

L_{RP}

$$(/ /) = (\quad \quad) \quad (\quad \quad)$$

L_{RP}

$$(/ /) = (\quad \quad) L_{RP}$$

%	%	%	%	%	
%	%	%	%	%	

L_{RP}

/	/	/	/	/	/		
%	%	%	%	%	%	%	
%	%	%	%	%	%	%	

$L_{RP} \quad L_{RI} \quad L_{RP}$

L_{RP}

$L_{RI} \quad)$

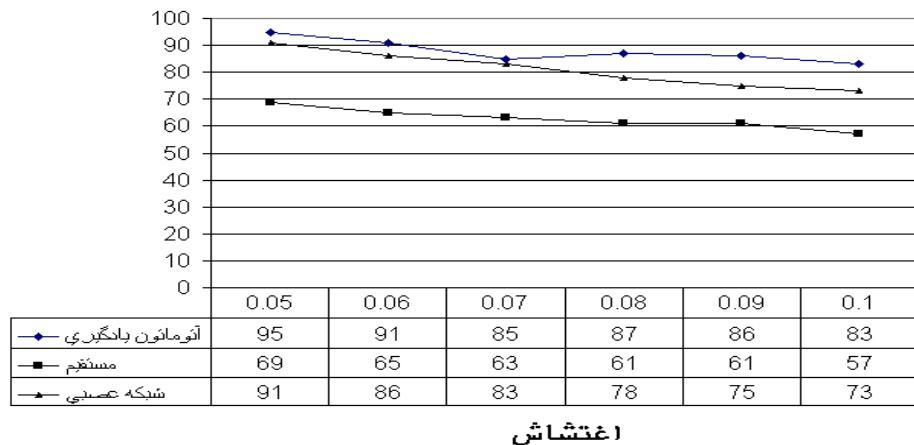
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(

مقایسه کارآیی روش‌های دریافت توب

گزینه



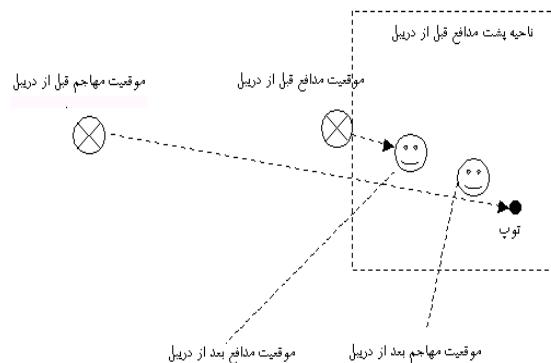
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()

(Soccer Server)

(kick pow dir)

L_{RI} L_{RP} ()



()

) (

L_{RI} L_{RP}

()

L_{RI} (%)

L_{RI}

L_{RP}

¹ Kickable Area

()

:

		()				()		
%	%	/ /		L_{RP}	%	/ /		L_{RP}
%	%	/ /		L_{RP}	%	/ /		L_{RP}
%	%	/ /		L_{RP}	%	/ /		L_{RP}
%	%	/ /		L_{RP}	%	/ /		L_{RP}
%	%	/ /		L_{RP}	%	/ /		L_{RP}
%	%	/ /		L_{RP}	%	/ /		L_{RP}^*
%	%	/ /		L_{RP}	%	/ /		L_{RP}
%	%	/ /		L_{RP}	%	/ /		L_{RP}
%	%	/		L_{RI}	%	/		L_{RI}^*
%	%	/		L_{RI}	%	/		L_{RP}^*
%	%	/		L_{RI}	%	/		L_{RI}

:

		()				()		
%	%	/		L_{RI}	%	/		L_{RI}
%	%	/ /		L_{RP}	%	/ /		L_{RP}^*

:

%	%	%	%		
%	%	%	%		
%	%	%	%		

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