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a y

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p r p of pfor op s p , sboo of b
b p s pd A A, pz p rs , pz, 100871, bp
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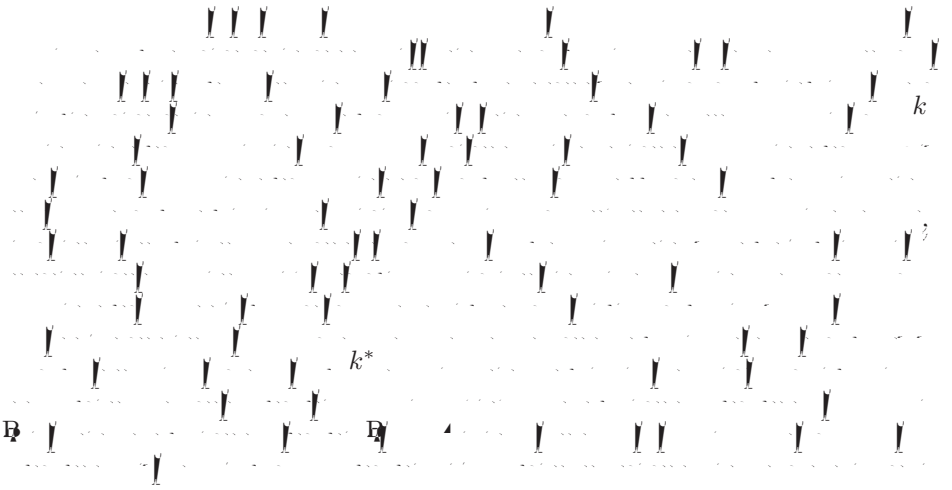
Abstract. ss p r b s b p d s d for d o d pz pd p s s pd b zor b s z p r p o d for s p - r r rp pz. o r, b zor b b r pp d p o o of b boo d pd p d s o ropz r s f b p b r of o p op p s s po pp rop r s . p , b o - p ( ) zor b for ss p r s, p pd of sp - pd - rz rp pz zor b b r p o p b p s op s d o p op p s of b zor b , b s b p ops r d o o r o b s d r b s. p b sp p r, ops r p zo- r b bro zb b s p pz- pz ( ) b r op s op r r op, ps d of b pr o s s d r r op. sd ops r d b b s op p r p s b o r p rop os d zor b o p r for s b or zp op op bo b od s op pd p r r s op.

Keywords: o p ( ) zor b , ss p r , s p pz- pz ( ) b r op rp pz, od s op

I



orr spopd pz bor.

D.-S. Huang et al. (Eds.): ICIC 2008, LNCS 5226, pp. 552–560, 2008.

k

k^*

k^*

k^*

k

a a

$$p\ x|\Theta_k \quad \sum_{i=1}^{k} \alpha_i p\ x|\theta_i \quad \sum_{i=1}^{k} \alpha_i p\ x|\mu_i, \Sigma_i\ ,$$

k $\alpha_i \geq$ $p\ x|\theta_i$

$\sum_{i=1}^{k} \alpha_i$

$$p\ x|\theta_i \quad p\ x|\mu_i, \Sigma_i \quad \frac{}{\pi\ \ ^{\frac{}{2}} |\Sigma_i|^{\frac{1}{2}}} e^{-\frac{1}{2}(x-\mu\ )^T \Sigma^{-1}(x-\mu\ )},$$

μ_i Σ_i

Θ_k

$\Theta_k \quad \theta_i, \cdots, \theta_k, \alpha_1, \cdots, \alpha_k$

[illegible] N [illegible] $\mathcal{X}$ [illegible] $\{x_t\}_{t=1}^N$ [illegible]

$$p\ \mathcal{X}|\Theta_k \quad \prod_{t=1}^N p\ x_t|\Theta_k \quad \sum_{t=1}^N \quad \sum_{i=1}^k \alpha_i p\ x_t|\theta_i\ ,$$

[illegible] Θ_k [illegible]

$$\alpha_i^+ \quad \frac{}{n}\sum_{t=1}^N P\ i|x_t \quad \mu_i^+ \quad \sum_{t=1}^N x_t P\ i|x_t\ / \sum_{t=1}^N P\ i|x_t$$

$$\Sigma_i^+ \quad \sum_{t=1}^N P\ i|x_t \quad x_t - \mu_i^+ \quad x_t - \mu_i^+\ ^T / \sum_{t=1}^N P\ i|x_t\ ,$$

[illegible] $P\ i|x_t$ [illegible] $\alpha_i p\ x_t|\theta_i\ / \sum_{i=1}^k \alpha_i p\ x_t|\theta_i$ [illegible]

[illegible]

[illegible] $x \in X \subset \mathcal{R}^d$ [illegible] $y \in Y \subset \mathcal{R}^m$ [illegible] $p\ x, y \quad p\ x\ p\ y|x$ [illegible] $q\ x, y \quad q\ y\ q\ x|y$ [illegible] $D_x \quad \{x_1, \cdots, x_n\}$ [illegible] $p\ y|x \quad p\ x \quad q\ x|y \quad q\ y$ [illegible]

$$H\ p \parallel q \quad \int p\ y|x\ p\ x \quad q\ x|y\ q\ y\ \ dxdy.$$

[illegible] y [illegible] $y \quad \{\ , \cdots, k\} \subset R$ [illegible]

$$p\ x \quad p_0\ x \quad \frac{}{N}\sum_{t=1}^N G\ x - x_t \ \_\_ \quad p\ y \quad i|x \quad \alpha_i q\ x|\theta_i\ /q\ x|\Theta_k \ \_\_$$

$$q\ x|\Theta_k \quad \sum_{i=1}^k \alpha_i q\ x|\theta_i \ \_\_ q\ y \quad q\ y \quad i \quad \alpha_i > \ \_\_ \sum_{i=1}^k \alpha_i \quad ,$$

G $q\ x|y$ i $q\ x|\theta_i$

$q\ y$ $q\ x|y$

$p\ y|x$ $q\ y$ $q\ x|y$

$\mathbf{P}_i$

α_i $\epsilon >$

B YY

Step 1: k Θ_k l

Step 2:

Θ_k l

Step 3: Θ_k l

Θ'_{k-1} l Θ'_{k+1} l

Step 4: $Acc\ M$ $J\ \Theta'_{k-1}\ l\ - J\ \Theta_k\ l$ $Acc\ M\ >$ $\Theta'_{k-1}\ l$

Step 5: $Acc\ S$ $J\ \Theta'_{k+1}\ l\ - J\ \Theta_k\ l$ $Acc\ S\ >$ $\Theta'_{k+1}\ l$

Step 6: $\epsilon >$ k

l l

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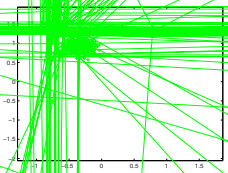
L

k k

D z, , D d .



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