Pareto
Bayes

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Bayes

8 D ɾ . 8 D ɾ 3P ayeto

X X

$$F(x \quad \theta a) \qquad (ax \quad)^{\theta} \; x$$

$$f(x \quad a\,\theta) \quad \theta a^{\theta} x^{(\theta \quad)} x$$

a θ a θ

n m n

R_j j m X n

R X

n H H N !

Pareto Bayes

$$M \quad n(n \quad R\ )(n \quad R \quad R\ ) \quad \left(n \quad \sum_{j}^{m} \left(R_j \quad\right)\right)$$

$$L(a\,\theta|x) \quad M \quad m \quad \theta \quad m \quad a \quad \sum_{j}^{m}\left[\theta(\quad R_j) \quad \right] \left(\frac{x_j}{a}\right)$$

$$\theta_M \quad \frac{m}{T}$$

$$T \quad \sum_{j}^{m}(\quad R_j) \left(\frac{x_j}{a}\right)$$

$$S\,(\theta\,\delta) \quad \frac{(\delta \quad \theta)}{\theta}$$

θ

$$\delta \quad \frac{E(\theta \ |X)}{E(\theta \ |X)}$$

$\delta \quad \theta$

$X \quad (X \ X \quad X_n)$

$\pi\,(\theta)$

$$\delta \quad \frac{m}{T}$$

$$E(\theta \mid X) \quad {}^{\infty}\theta \;\; h(a\,\theta|x)d\theta \quad {}^{\infty}\theta$$

$$h(a\theta|x) \quad \frac{(\beta \quad T)^{\alpha \quad m}}{\Gamma(\alpha \quad m)}\theta^{\alpha \quad m} \quad e^{\theta(\beta \quad T)}$$

$$E(\theta^{q}|X) \quad {}^{\infty}\theta^{q}h(a\theta|x)d\theta \quad {}^{\infty}\theta^{q}\frac{(\beta \quad T)^{\alpha \quad m}}{\Gamma(\alpha \quad m)}\theta^{\alpha \quad m} \quad e^{\theta(\beta \quad T)}d\theta$$

$$\frac{(\beta \quad T)^{\alpha \quad m}}{\Gamma(\alpha \quad m)} \quad {}^{\infty}\theta^{\alpha \quad m \quad q} \quad e^{\theta(\beta \quad T)}d\theta \quad \frac{\Gamma(\alpha \quad m \quad q)}{\Gamma(\alpha \quad m)(\beta \quad T)^{q}}$$

$$E(\theta^{q}|X) \quad {}^{\infty}\theta^{q}h(a\theta|x)d\theta \quad {}^{\infty}\theta^{q}\frac{(\beta \quad T)^{\alpha \quad m}}{\Gamma(\alpha \quad m)}\theta^{\alpha \quad m} \quad e^{\theta(\beta \quad T)}d\theta$$

$$\frac{(\beta \quad T)^{\alpha \quad m}}{\Gamma(\alpha \quad m)} \quad {}^{\infty}\theta^{\alpha \quad m \quad q} \quad e^{\theta(\beta \quad T)}d\theta \quad \frac{\Gamma(\alpha \quad m \quad q)}{\Gamma(\alpha \quad m)(\beta \quad T)^{q}}$$

$$\delta \quad \left[\frac{E(\theta^{q}|X)}{E(\theta^{q}|X)}\right]^{\overline{q}} \quad \left[\frac{\Gamma(\alpha \quad m \quad q)}{\Gamma(\alpha \quad m \quad q)}\right]^{\overline{q}}\frac{}{\beta \quad T}$$

$\Gamma(\alpha\ \beta)$ $\alpha\ \beta$

$U(\quad)\ U(\quad c)\quad \alpha\ \beta$

$\pi(\alpha) \quad \pi(\beta) \quad \frac{}{c}$

$\beta \quad c(c \quad)$ c

$X \quad (X \quad X \quad X_n)$

$\pi(\theta)$ $\alpha\ \beta$

$)$

$$\delta_{HB} \quad \frac{{}^{c}\ \beta^{\alpha}\Gamma(\alpha \quad)}{}$$

$$E(\theta \mid X) \quad \int_{\infty}^{\infty} \theta \; h(a\,\theta \mid x)\,d\theta \quad \frac{\int^{c}\int^{\infty} \frac{\beta^{\alpha}}{\Gamma(\alpha)} \theta^{\alpha \quad m} \quad e^{(\beta \quad T)\theta} d\theta d\alpha d\beta}{\int^{c} \frac{\beta^{\alpha}\Gamma(\alpha \quad m)}{\Gamma(\alpha)(\beta \quad T)^{\alpha \quad m}} d\alpha d\beta}$$

$$\frac{\int^{c} \frac{\beta^{\alpha}\Gamma(\alpha \quad m \quad)}{\Gamma(\alpha)(\beta \quad T)^{\alpha \quad m}} d\alpha d\beta}{\int^{c} \frac{\beta^{\alpha}\Gamma(\alpha \quad m)}{\Gamma(\alpha)(\beta \quad T)^{\alpha \quad m}} d\alpha d\beta}$$

$$\delta_{HB} \quad \frac{E(\theta \mid X)}{E(\theta \mid X)} \quad \frac{\int^{c} \frac{\beta^{\alpha}\Gamma(\alpha \quad m \quad)}{\Gamma(\alpha)(\beta \quad T)^{\alpha \quad m}} d\alpha d\beta}{\int^{c} \frac{\beta^{\alpha}\Gamma(\alpha \quad m \quad)}{\Gamma(\alpha)(\beta \quad T)^{\alpha \quad m}} d\alpha d\beta}$$

B $\quad \theta_B(a\,b) \quad \theta_{EB} \quad \int_D \theta_B(a\,b) \quad p(a\,b)\,dadb$

$\int_D \theta_B(a\,b) \quad p(a\,b)\,dadb \quad \infty \; D \quad a \quad b \quad p(a\,b) \quad a \quad b \quad \theta_B(a\,b)$ [redacted]

h 2

= $\quad X \quad (X \; X \quad X_n)$

$\pi(\theta) \quad H$.

Pareto Bayes

α β q

n m $\hat{\theta}$ $\hat{\delta}$ $\hat{\delta}$

n	m	θ_M	δ	δ

n m $\hat{\delta}$ $\hat{\delta}$

n	m	δ	δ

α β c

n m $\hat{\delta}_{HB}, \hat{\delta}_{EB}$

n	m	δ_{HB}	δ_{EB}

δ δ

δ δ