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$$\begin{array}{l} uT|T|W_u = \\ \{w_u(t)\}|W_u \in \\ R^{|T|}, \sum_t w_u(t) = \\ 1w_u(t)t \\ utS|S|O_t = \\ \{d_{u,t}(s)|O_t \in \\ R^{|S|}, \sum_s d_{u,t}(s) = \\ 1\}d_{u,t}(s)s \\ \quad ??[0,100][0,8] \\ (w_{u,2} = 0.08, w_{u,32} = 0.48, w_{u,83} = 0.44) \end{array}$$

$$O_2 = (d_{u,2,4} = 0.5, d_{u,2,5} = 0.5)$$

$$O_{32} = (d_{u,32,4} = 1.0)$$

$$O_{83} = (d_{u,83,4} = 0.5, d_{u,83,5} = 0.5)$$

$$\begin{array}{l} M_uTM = \\ (\theta, \phi)\theta T\phi tt \end{array}$$

$$z_t = \arg \max_k \prod_{w \in t} P(w|\phi_k)$$

$$(1)_{uu}$$

$$w_{u,k} = |\{t : t \in M_u \wedge z_t = k\}||M_u|$$

$$(2) \quad ??Sts_tk$$

$$\begin{array}{l} O_k=\{d_{u,k,s}|s \in S\} \\ =\{ |t : t \in M_u \wedge z_t = k \wedge s_t = s||M_u||s \in \mathfrak{S} \} \end{array}$$

$$\begin{array}{l} ??S= \\ [0,8]O_k^1O_k^2O_k^3 \\ O_k^1 \\ O_k^2 \\ O_k^3 \\ O_k^2O_k^3O_k^1O_k^3O_k^u,O_k^v \end{array}$$

$$Sim(O_k^u,O_k^v)=|S|-|\sum_{i=0}^{|S|}d_i^uv_i-\sum_{i=0}^{|S|}d_i^vv_i||S|$$

$$(4) \quad \begin{array}{l} d_i i^{th} v_i \\ \quad ????$$

$$Sim(O_k^1,O_k^3)=0$$

$$Sim(O_k^2,O_k^3)=6/8$$

$$Sim(O_k^1,O_k^2)=2/8$$

$$TSM_uSM_v$$

$$Sim(SM_u,SM_v)=\sum_{k=1}^{|T_{u,v}|}\theta_u(k)Sim(O_k^u,O_k^v)$$

$$\begin{array}{l} (5) \quad T_{u,v}\theta_u(k)uk \\ \quad uvuSim(SM_u,SM_v)\neq \\ Sim(SM_v,SM_u) \\ \quad tFu_a u_a tFt f \in \\ F< \\ f^u_a,t,r_f>r_f t f \\ t f z_t ?? s_t t f ?? \end{array}$$

$$Sim(f,t)=\theta_f(z_t)Sim(O_{z_t}^f,O_{z_t}^t)$$

$$(6)_{fu_a}$$

$$Sim(f,u_a)=\sum_{k=1}^{|T_{u,v}|}\theta_f(k)Sim(O_k^f,O_k^{u_a})$$