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

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

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

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

$M_uTM =$
$(\theta, \phi)\theta T\phi tt$

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

(1)
uu

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

(2)
??Sts_tk

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

(3)

??$S =$
$[0, 8]O_k^1O_k^2O_k^3$
O_k^1
O_k^2
O_k^3
$O_k^2O_k^3O_k^1O_k^3O_k^u, O_k^v$

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

(4)
$d_i i^{th} v_i$
????

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

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

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

TSM_uSM_v

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

(5)
$T_{u,v}\theta_u(k)uk$
$uvuSim(SM_u, SM_v) \neq$
$Sim(SM_v, SM_u)$
$tFu_au_atFttf \in$
$F <$
$f, u_a, t, r_f >_f tf$
tfz_t**??**s_tf**??**

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

(6)
fu_a

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