

創域理工学部 情報計算科学科 4 年
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$$\begin{aligned}
s_{in_{disc}}^l &\leftarrow W^l s_{A_{disc}}^{l-1} \\
s_{in_{gen}}^l &\leftarrow V^l s_{A_{gen}}^{l+1} \\
x_{F_{disc}}^l &\leftarrow x_{F_{disc}}^l + s_{in_{disc}}^l \cdot T_\theta(t-1) \\
x_{F_{gen}}^l &\leftarrow x_{F_{gen}}^l + s_{in_{gen}}^l \cdot T_\theta(t-1) \\
\text{if } \gamma^l(t) > 0 \text{ then} \\
&e_{T_{disc}}^l \leftarrow \alpha_{disc} \cdot (x_T^l - x_{F_{disc}}^l) \\
&e_{T_{gen}}^l \leftarrow \alpha_{gen} \cdot (x_T^l - x_{F_{gen}}^l) \\
x_T^l &\leftarrow x_T^l + \gamma^l(t) \cdot (-e_{T_{disc}} - e_{T_{gen}} + (x_T^l > 0) \odot (e_{B_{disc}}^l + e_{B_{gen}}^l)) \\
\text{if } \gamma^l(t) > 0 \text{ then} \\
&e_{T_{disc}} \leftarrow \alpha_{disc} \cdot (x_T^l - x_{F_{disc}}^l) \\
&e_{T_{gen}} \leftarrow \alpha_{gen} \cdot (x_T^l - x_{F_{gen}}^l) \\
s_A^l &\leftarrow \text{sign}(x_T^l - x_A^l) \odot (|x_T^l - x_A^l| > T_\theta(t)) \\
s_A^l &\leftarrow s_A^l \odot (x_A^l + s_A^l \cdot T_\theta > 0) \\
x_A^l &\leftarrow x_A^l + T_\theta(t) \cdot s_A^l \\
\text{s_out.send}(s_A^l)
\end{aligned}$$

$$\begin{aligned}
&\text{e_out.send}(s_{e_{disc}}^l) \\
&\text{e_out.send}(s_{e_{gen}}^l) \\
e_{in_{disc}}^l &\leftarrow (W^{l+1})^\top s_{e_{disc}}^{l+1} \\
e_{in_{gen}}^l &\leftarrow (V^{l-1})^\top s_{e_{gen}}^{l-1} \\
e_{B_{disc}}^l &\leftarrow e_{B_{disc}}^l + T_\theta(t-1) \cdot e_{in_{disc}}^l \\
e_{B_{gen}}^l &\leftarrow e_{B_{gen}}^l + T_\theta(t-1) \cdot e_{in_{gen}}^l \\
s_{e_{disc}}^l &\leftarrow \text{sign}(e_{T_{disc}}^l - e_{A_{disc}}^l) \odot (|e_{T_{disc}}^l - e_{A_{disc}}^l| > T_\theta(t)) \\
s_{e_{gen}}^l &\leftarrow \text{sign}(e_{T_{gen}}^l - e_{A_{gen}}^l) \odot (|e_{T_{gen}}^l - e_{A_{gen}}^l| > T_\theta(t)) \\
e_{A_{disc}}^l &\leftarrow e_{A_{disc}}^l + T_\theta(t) \cdot s_{e_{disc}}^l \\
e_{A_{gen}}^l &\leftarrow e_{A_{gen}}^l + T_\theta(t) \cdot s_{e_{gen}}^l
\end{aligned}$$

$$\begin{aligned}
W^l &\leftarrow W^l + \alpha e_{T_{disc}}^l \phi(x_T^{l-1})^\top \\
V^l &\leftarrow V^l + \alpha e_{T_{gen}}^l \phi(x_T^{l+1})^\top
\end{aligned}$$