Actor network policy $\Pi_{\theta}(S_t, a_t)$ 1D-CNN State S_t 1D-CNN 1D-CNN Past chunk quality 1D-CNN Throughput (local) 1D-CNN $au_{l_{t-1}}$ lacksquare lacksquare lacksquare $au_{l_{t-k+1}}$ 1D-CNN Starttime (local) Past download stats $\mathcal{D}s_{l_t}$ $\mathcal{D}s_{l_{t-1}}$ $\bullet \bullet \bullet$ $\mathcal{D}s_{l_{t-k+1}}$ 1D-CNN Endtime (local) Throughput (remote) Starttime (remote) $\mathcal{D}s_{r_t} \mid \mathcal{D}s_{r_{t-1}} \mid \bullet \bullet \bullet \mid \mathcal{D}s_{r_{t-k+1}}$ Endtime (remote) $\mathcal{D}e_{r_t} \left| \mathcal{D}e_{r_{t-1}} \right| \bullet \bullet \bullet \mathcal{D}e_{r_{t-k+1}}$ Deadline Downloaded (local) 1D-CNN Ongoing download stats Time elasped (local) 1D-CNN Chunk length (local) 1D-CNN $clen_l$ 1D-CNN Downloaded (remote) **Critic network** 1D-CNN Time elasped (remote) 1D-CNN Value Chunk length (remote) 1D-CNN $clen_r$