

## Mainstream Scheduler Problem Formulation

Given:

$$\begin{aligned}\text{applications} &= \{app_1, app_2, \dots, app_n\} \\ \text{correlations} &= \{corr_1, corr_2, \dots, corr_n\} \\ \text{event-lengths} &= \{len_1, len_2, \dots, len_n\} \\ \text{event-frequencies} &= \{freq_1, freq_2, \dots, freq_n\} \\ \text{layer-latencies} &= \{lat_1, lat_2, \dots, lat_m\} \\ \text{budget} &\end{aligned}$$

Set:

$$\begin{aligned}\text{specializations} &= \{spec_1, spec_2, \dots, spec_n\} \\ \text{frame-rates} &= \{fps_1, fps_2, \dots, fps_n\}\end{aligned}$$

Maximize:

$$\sum_{\forall i \in n} \text{score}(spec_i, fps_i, len_i, freq_i, corr_i)$$

Subject to:

$$\text{budget} \geq \text{cost}(\text{specializations}, \text{frame-rates}, \text{layer-latencies})$$