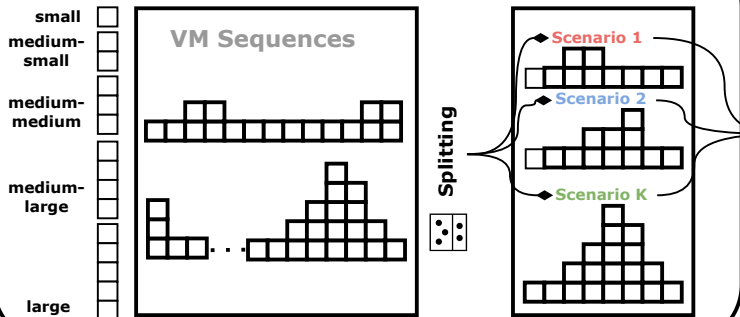


(1) Scenario Generation Tool



(2) Option Miner



Scheduler Prompt Template

LLM-based Function Optimization

Scenario-Specified Policies

Code 1 (for Scenario 1)

```
cpu_weight = 0.6
mem_weight = 0.4
cpu_score = cpu_weight * (1 / (1 + np.exp...
mem_score = mem_weight * (1 / (1 + np.exp...
```

Code 2 (for Scenario 2)

```
dynamic_factor = (bin [0] / (bin [0] + bin [1]...
adjusted_cpu_weight = cpu_weight * dynam...
adjusted_mem_weight = mem_weight * (1 - ...
```

Code K (for Scenario K)

```
lookahead_score = 0
for i in range(min_lookahead_distance, ...):
    next_item = (item [0] * i, item [1] * i)
    lookahead_score = lookahead_factor * (looka...
```

(3) Pruning Tool



Pruned Policy Set

Code 1

```
cpu_weight = 0.6
mem_weight = 0.4
cpu_score = cpu_weight * (1 / (1 + np.exp...
mem_score = mem_weight * (1 / (1 + np.exp...
```

Code K'

```
lookahead_score = 0
for i in range(min_lookahead_distance, ...):
    next_item = (item [0] * i, item [1] * i)
    lookahead_score = lookahead_factor * (looka...
```

(4) Option Composer



Context-Aware Scheduler Prompt Template

LLM-based Function Optimization

Context-Aware Scheduler

IF Scenario 1

```
cpu_weight = 0.6
mem_weight = 0.4
cpu_score = cpu_weight * (1 / (1 + np.exp...
mem_score = mem_weight * (1 / (1 + np.exp...
```

ELIF Scenario k

```
cpu_weight = 0.6
mem_weight = 0.4
cpu_score = cpu_weight * (1 / (1 + np.exp...
mem_score = mem_weight * (1 / (1 + np.exp...
```

ELSE Scenario K

```
lookahead_score = 0
for i in range(min_lookahead_distance, ...):
    next_item = (item [0] * i, item [1] * i)
    lookahead_score = lookahead_factor * (looka...
```