

Week 6 :

1. Execution Efficiency Metrics:

- CPU Efficiency: $\text{cpu_util} / \text{duration}$
- Memory Efficiency: $\text{memory_util} / \text{duration}$
- Memory-to-CPU Ratio: $\text{memory} / \text{cpu}$

2. IO Performance Metrics:

- IO Read/Write Ratio: $\text{fsRead} / \text{fsWrite}$

3. Concurrency and Parallelism Metrics:

- Voluntary Context Switch Rate: $\text{vContextSwitches} / \text{duration}$
58% Correlation
pairplot
- Involuntary Context Switch Rate: $\text{ivContextSwitches} / \text{duration}$
90% Correlation
pairplot
- Context Switch Efficiency: $\text{vContextSwitches} / (\text{vContextSwitches} + \text{ivContextSwitches})$

New feature

4. CPU Time Metrics:

- User to System CPU Time Ratio: $\text{userDiff} / \text{sysDiff}$
- Effective CPU Time: $(\text{userDiff} + \text{sysDiff}) / \text{duration}$

5. Memory Management Metrics:

- Heap Usage Efficiency: $\text{heapUsed} / \text{heapTotal}$
- Physical to Available Heap Ratio: $\text{heapPhysical} / \text{heapAvailable}$
- External Memory Ratio: $\text{external} / \text{heapTotal}$
- Allocated Memory Utilization: $\text{mallocMem} / \text{heapTotal}$

6. Event Loop Metrics:

- Event Loop Stability: $\text{elStd} / \text{elMean}$
- Event Loop Utilization: $\text{elMean} / \text{duration}$

7 . Computational Complexity Metrics:

- Bytecode to Metadata Ratio: $\text{bytecodeMetadataSize} / \text{heapPhysical}$
- Maximum Potential Heap Usage: $\text{heapLimit} - \text{heapUsed}$

8. Quality of Service Metrics:

- Effective Memory Size per Request: $\text{memory} / \text{netPkgRx}$
- Effective CPU Use per Request: $\text{cpu} / \text{netPkgR}$