# RTSS'23 Artifact Evaluation

This repostiory contains two different artifacts for reproducing the graphs and results contained in the paper titled:**Co-Located Parallel Scheduling of Threads to Optimize Cache Sharing**.
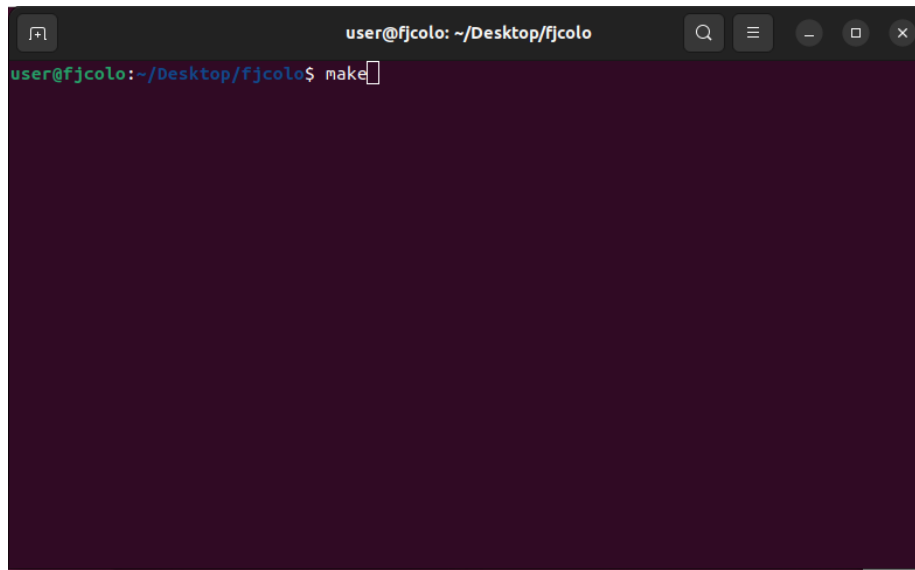
The two artifacts that the paper associates with is:

1. A simulated evaluation, presented in **Section VII**, of 3-PARM and 3-PARM-HD as comparisons to:

    1. Exact solutions with co-location EXACTCOLO and without EXACT-NOCOLO
    2. Graham's 2-factor makespan approximation
    3. DAG core allocation algorithms without co-location DAG-m and co-location heuristics DAG-LP and DAG-GB.

2. An empirical experiemnt of a bare-metal Fork-Join scheduling algorithm presented in **Section VIII** of the paper.

# Reproducing the Artifacts

Upon booting the VM a terminal and this PDF should have opened. The terminal should be in the fjcolo directory. A makefile has been provided to reproduce all data associated with the artifacts in this paper. Running the command `make` will reproduce several figures and extract the following figures:

1. `Fig. 6`: Schedulaibity Results
2. `Fig. 7`: Core Comparison for E
3. `Fig. 8`: Core Comparison for X
4. `TABLE II`: Mean Base B and Incremental Costs Y
5. `Fig. 9`: Task Analysis and Experimental Results of Group R
    - `(a)` FJ-791 F = .95
    - `(b)` FJ-956 F = .18
    - `(c)` FJ-484 F = .55

*Running the make command in the terminal*



*Expected output after make finishes*

All reproduced figures and tables will be stored in a `graphs` folder generated by the makefile. In addition to this an `artifacts.pdf` compiled of all figures will be placed in the local directory.

## Folder Contents

1. `makefile` - makefile that compiles all artifacts
2. `README.md` - source of this file.

3. `eval` - source of the simulated evaluation artifact
4. `simul` - source of the empirical experiment artifact
5. `paper.pdf` - a copy of the paper