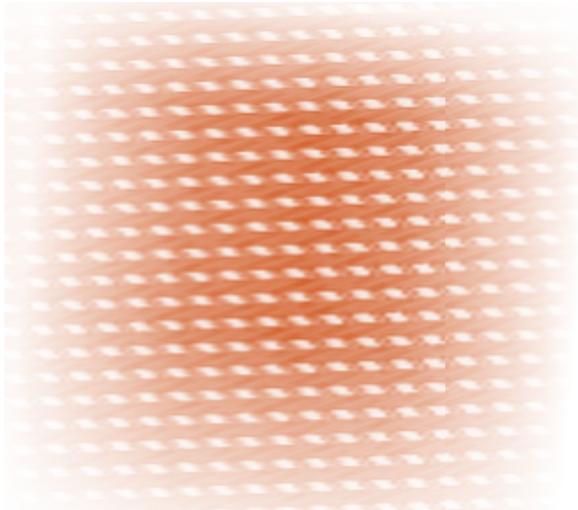


CAD Pattern Execution Time Estimator

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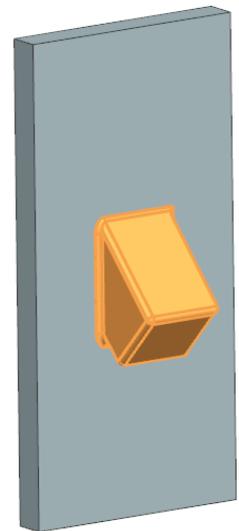
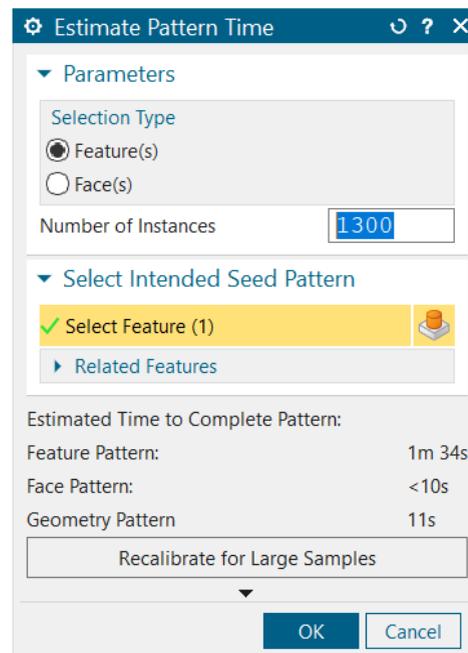


Problem

Complex patterning features are computationally expensive for CAD engines to solve. Models which require large patterns, such as a gas turbine blade, may require hours to accurately pattern seed instances. The computation cost of a large pattern is based on the type of pattern, number of duplicated instances, and seed geometry. Accurately predicting this cost during a modeling session can help designers better predict system downtime

Design Tool

This tool is a plugin for Siemens NX (though the underlying logic could be applied to any CAD system). The plugin calculates the execution time to create a pattern feature according to the selection of seed geometry and the number of instances in the pattern. The full manifestation of the tool is shown at right.



Performance

The calculations are linear approximations calibrated against the current system processing speed of the computer. They are generally accurate within about 20% of actual runtime, though the actual results vary on pattern size and resource management on the computer platform. Its goal is to provide a useful estimate of the time necessary to complete the pattern feature.

Access

The full code for the plugin is available at <https://github.com/Clemson-PLMC/PatternEstimatorTool.git>