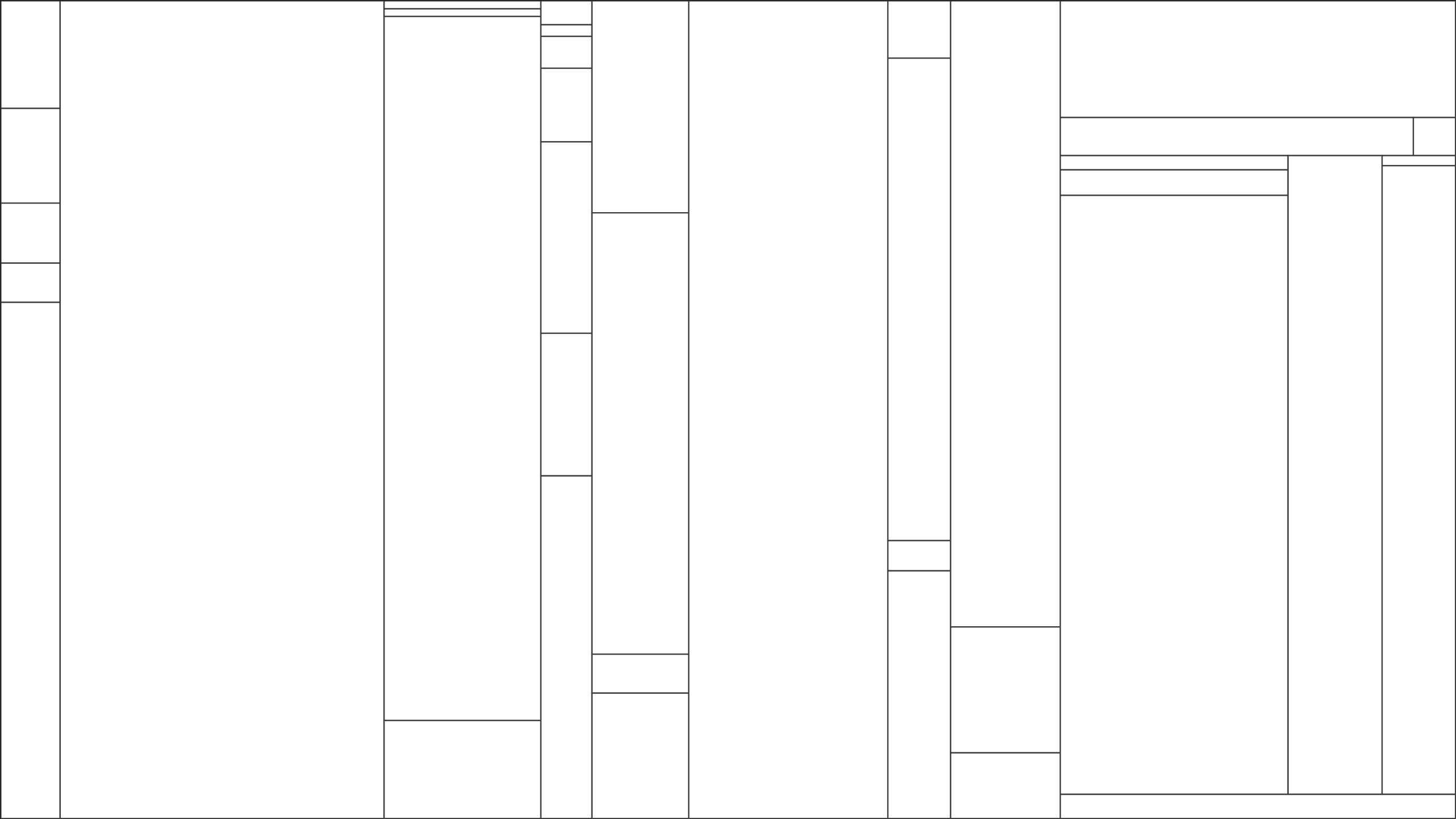


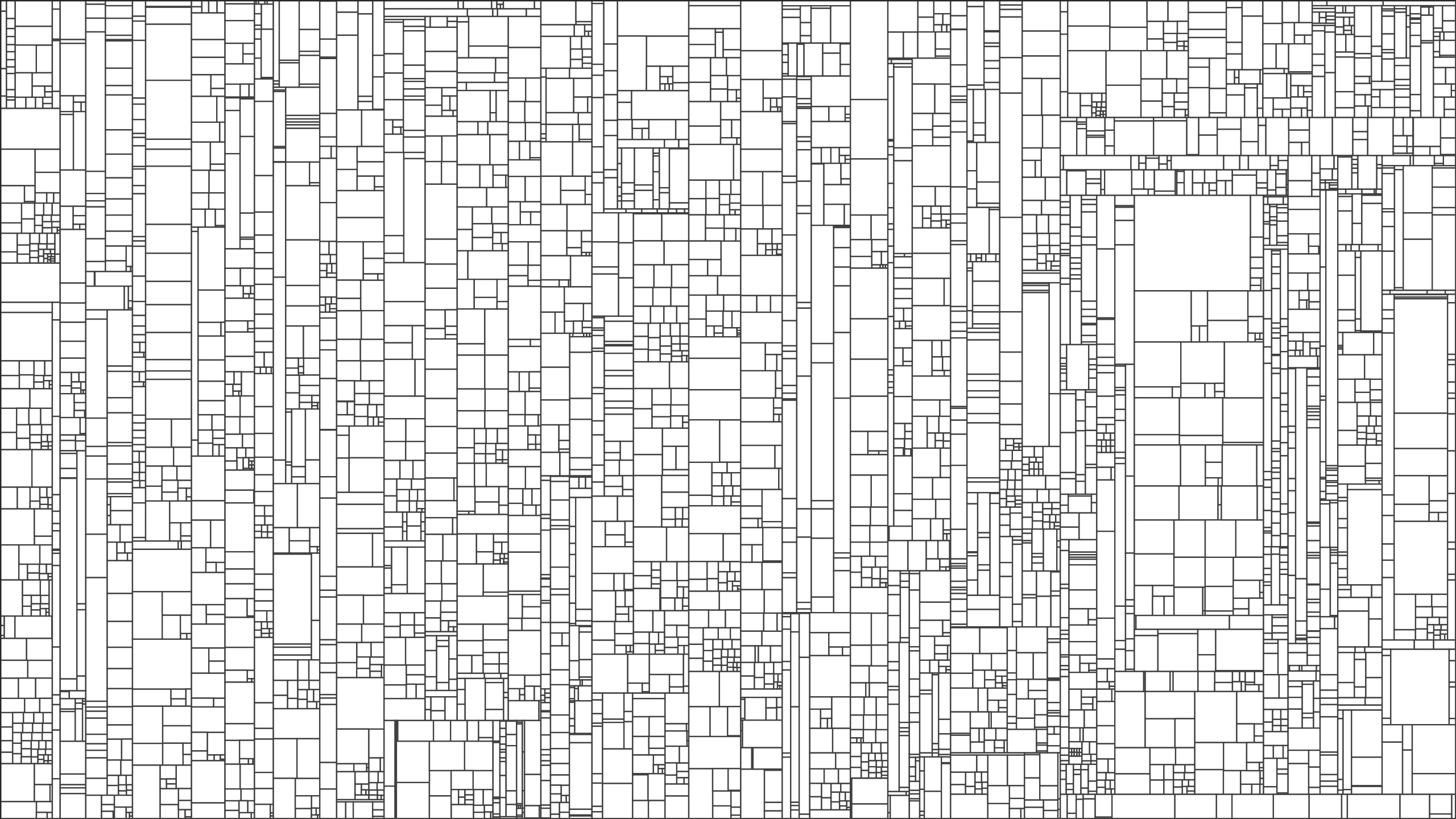


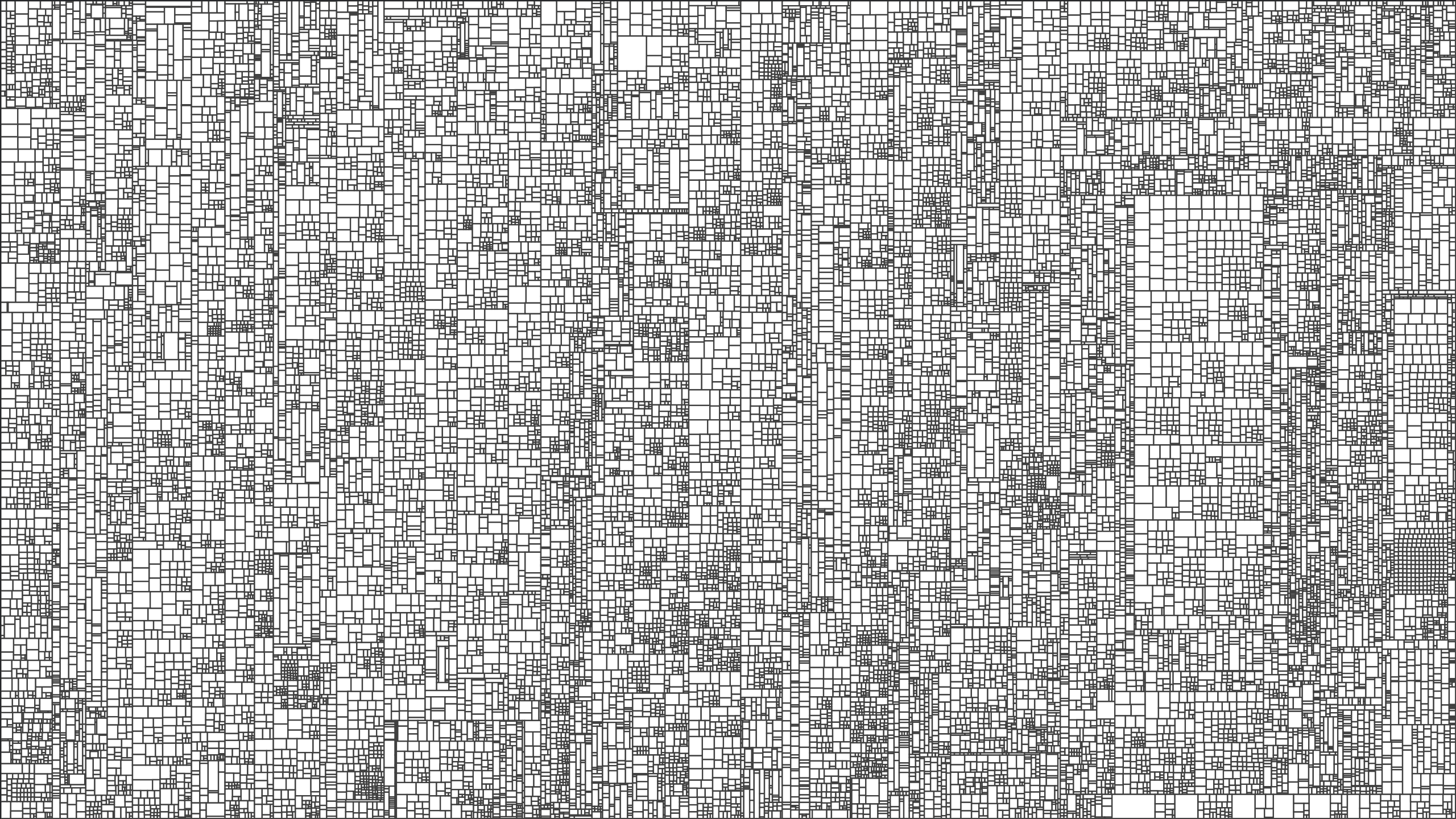
FAST FEEDBACK DESPITE SLOW TEST SUITES?
TEST-IMPACT-ANALYSIS FOR THE ROBOT FRAMEWORK

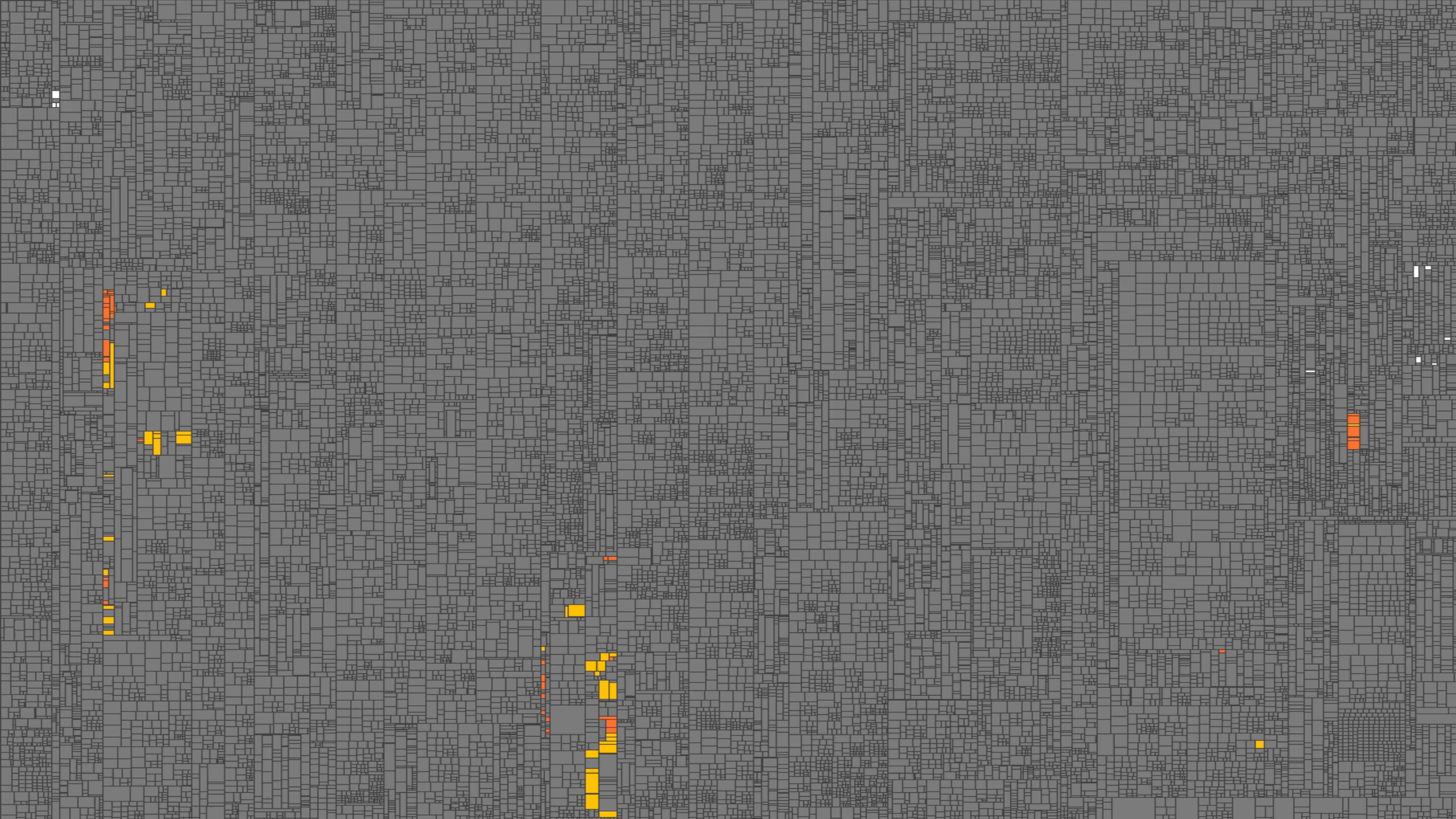
Elmar Juergens (cqse)





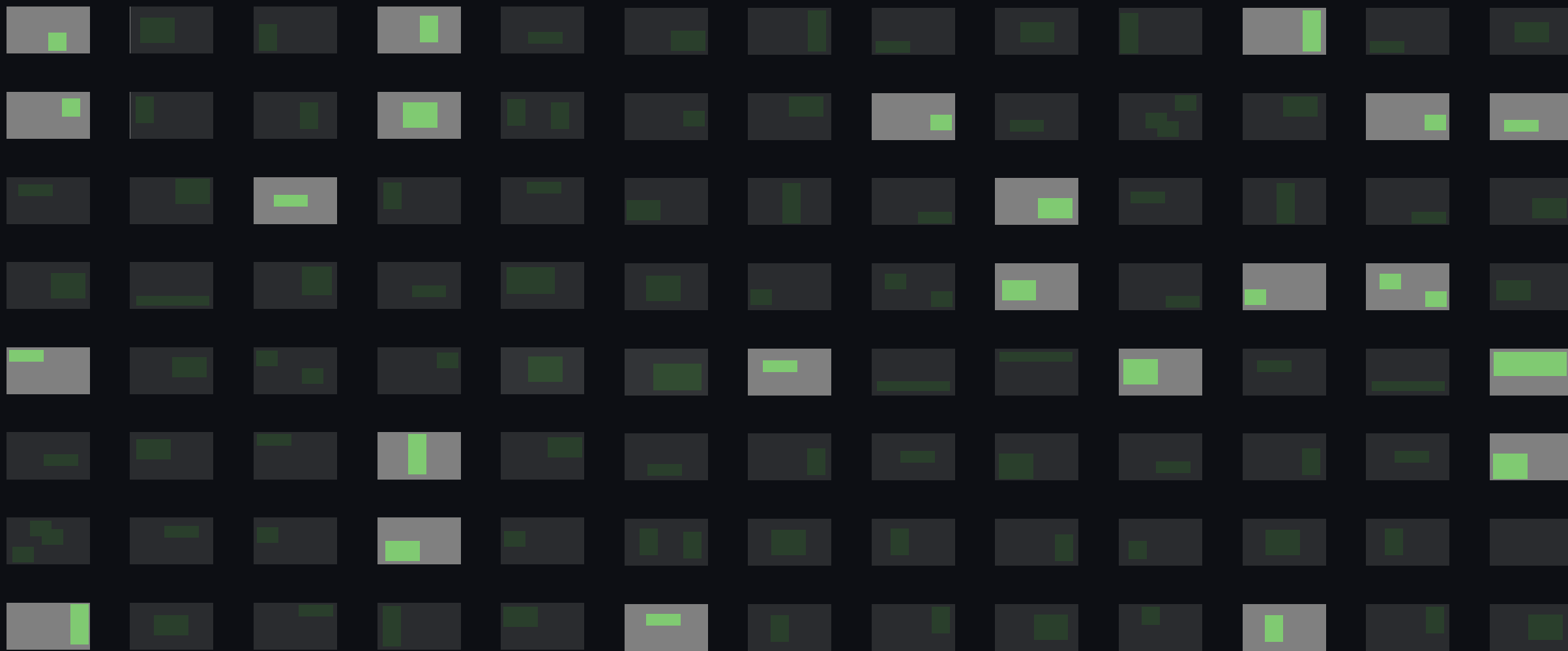




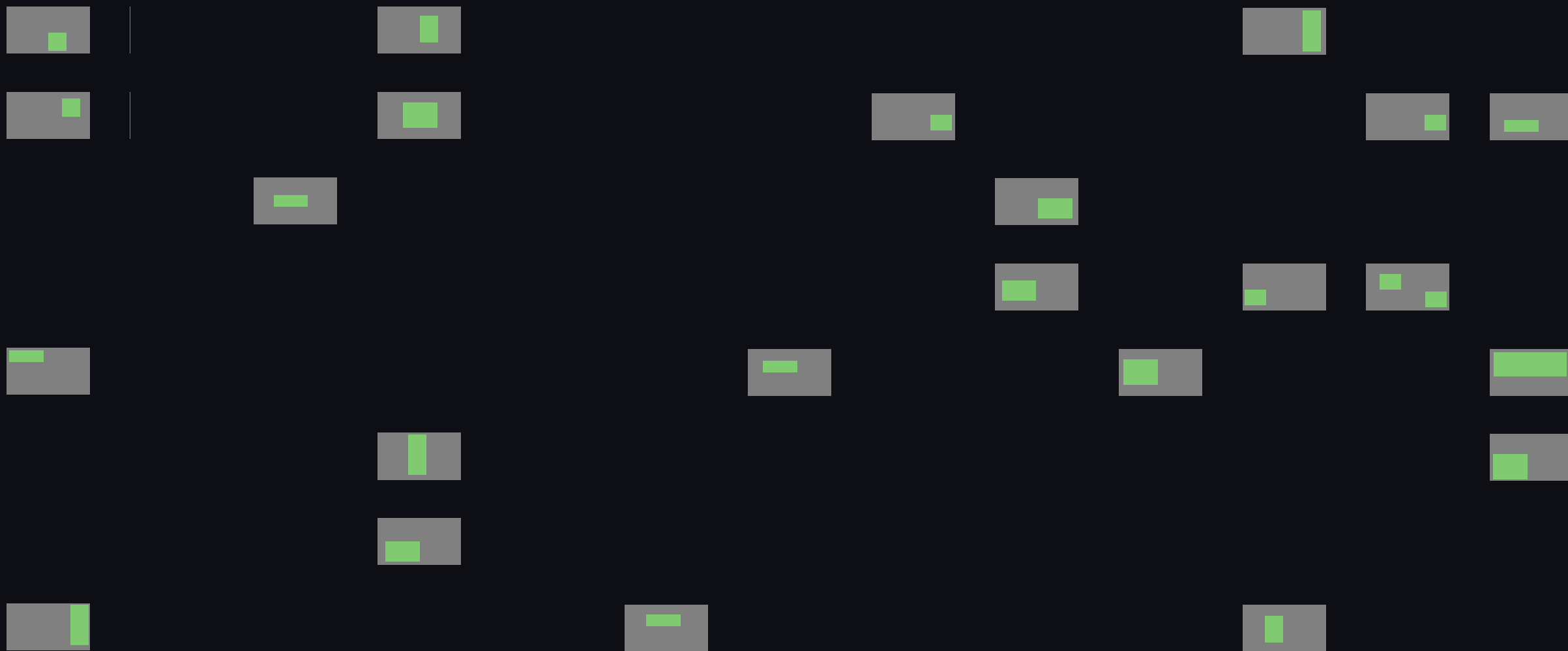




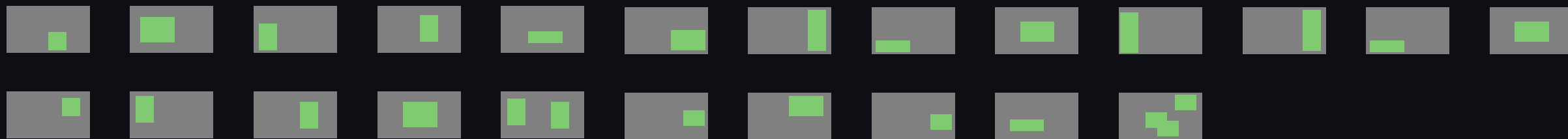
Step 1: Selection of Impacted Tests



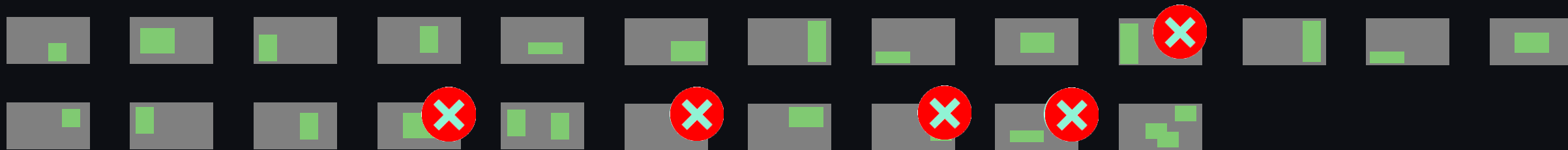
Step 1: Selection of Impacted Tests



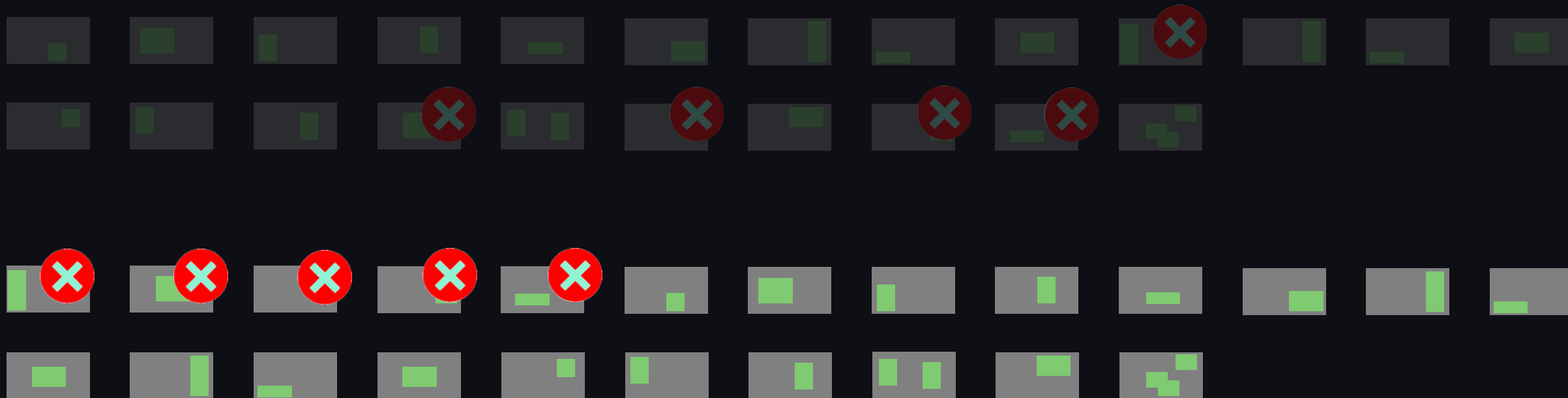
Step 1: Selection of Impacted Tests



Step 2: Prioritization of Impacted Tests



Step 2: Prioritization of Impacted Tests



Step 2: Prioritization of Impacted Tests



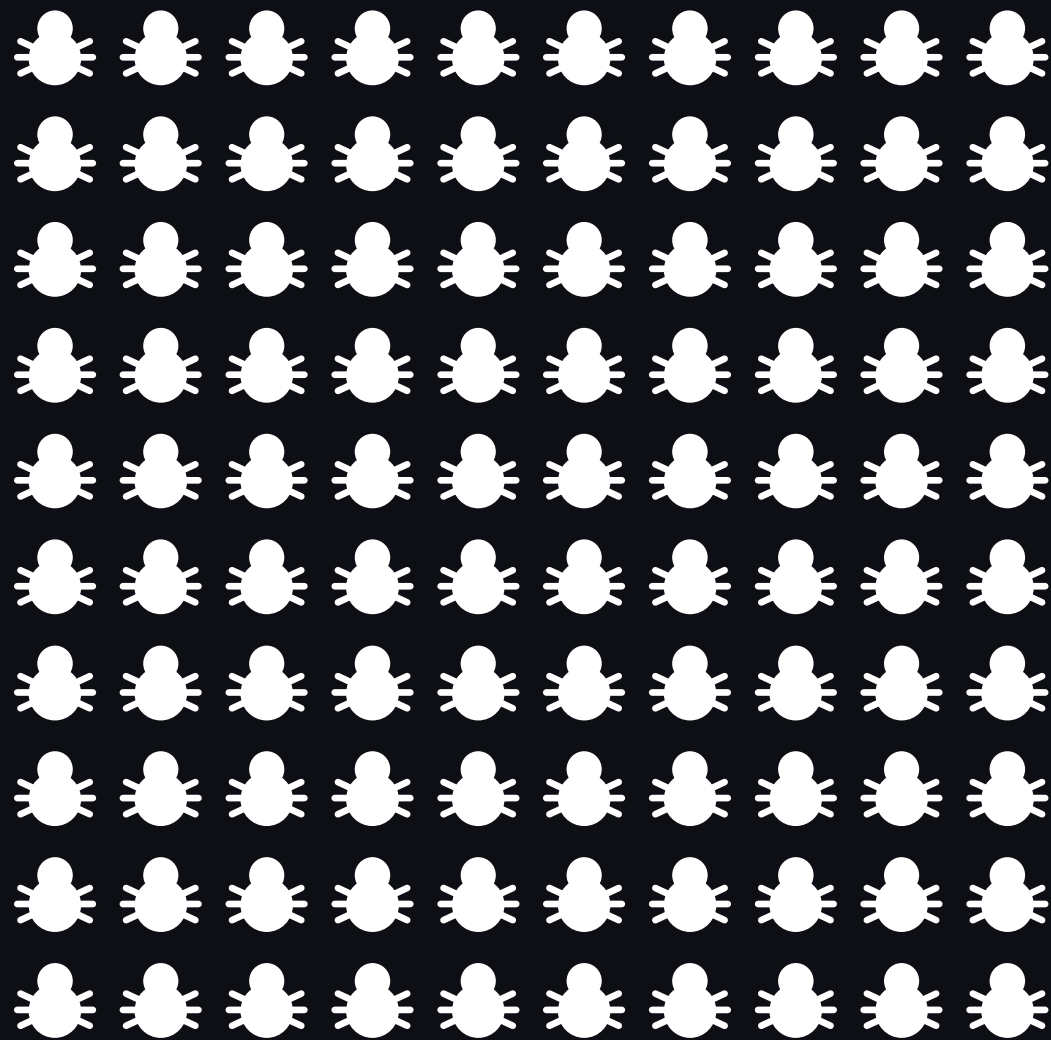
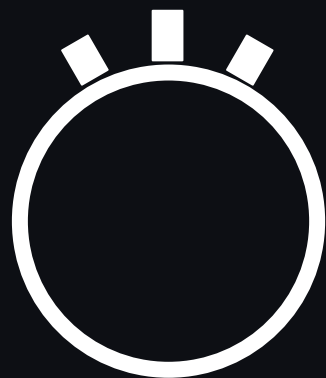
Change coverage

Execution time

Step 2: Prioritization of Impacted Tests

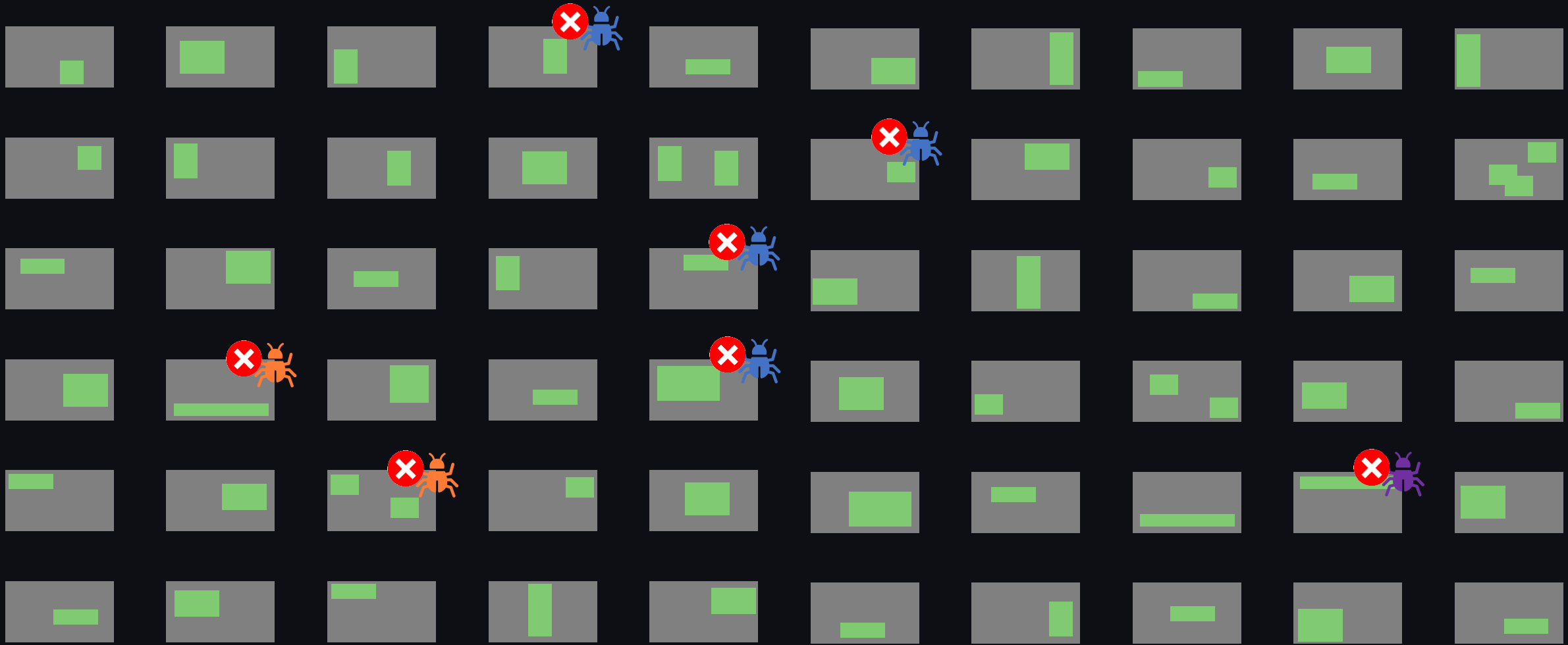






ISN'T THERE A SIMPLER WAY?





Pareto-Optimization



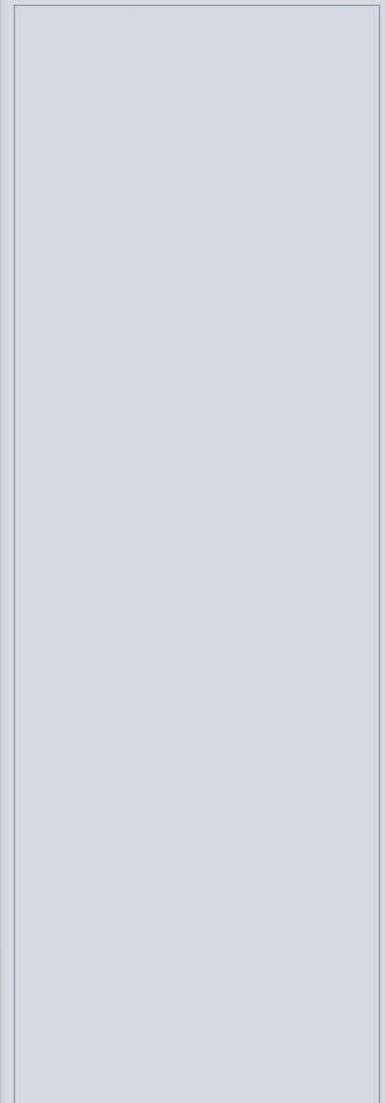
Sample Only the Active Layer/Mask

Untitled1 x Picture1.png x



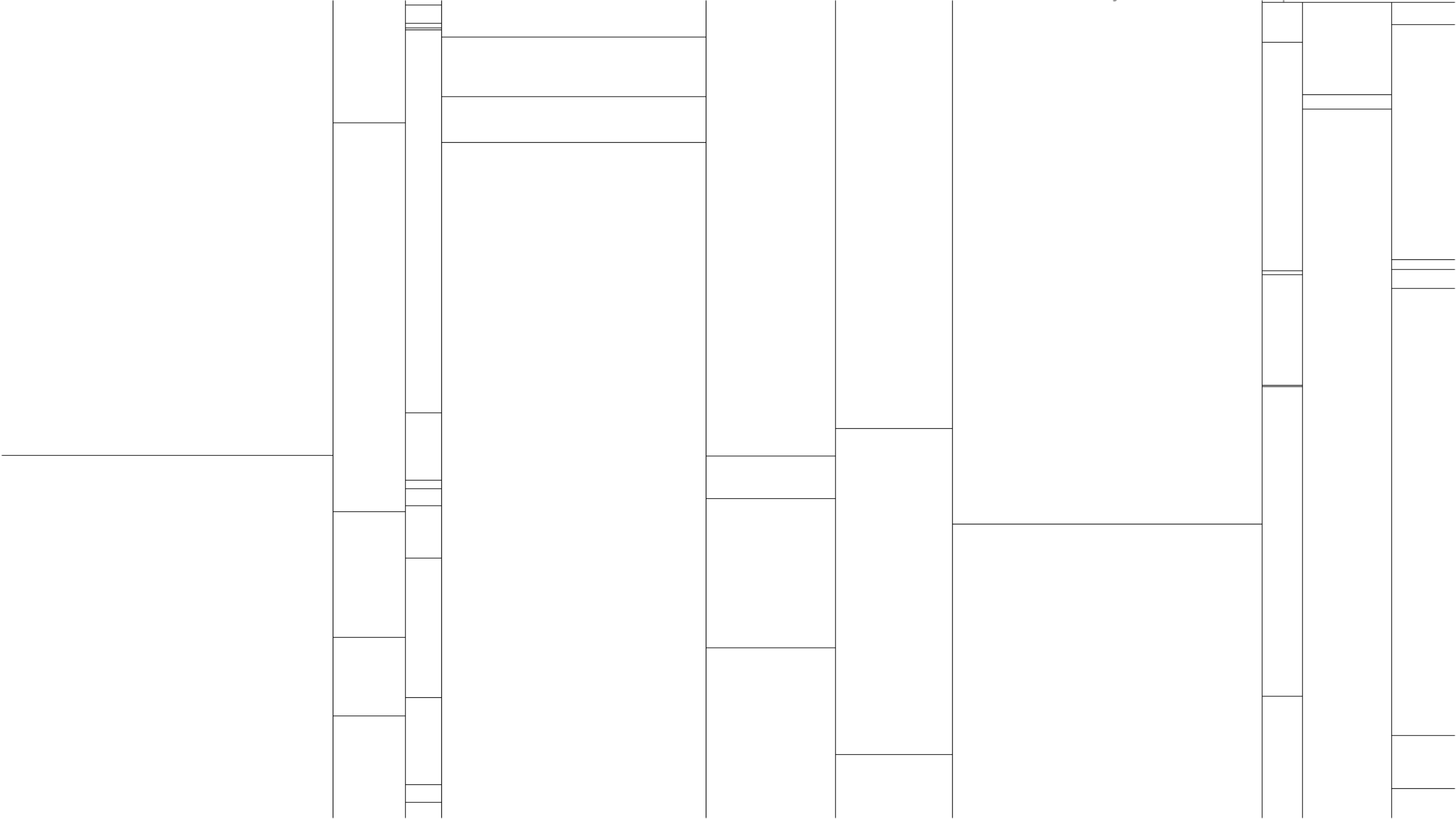
Layers

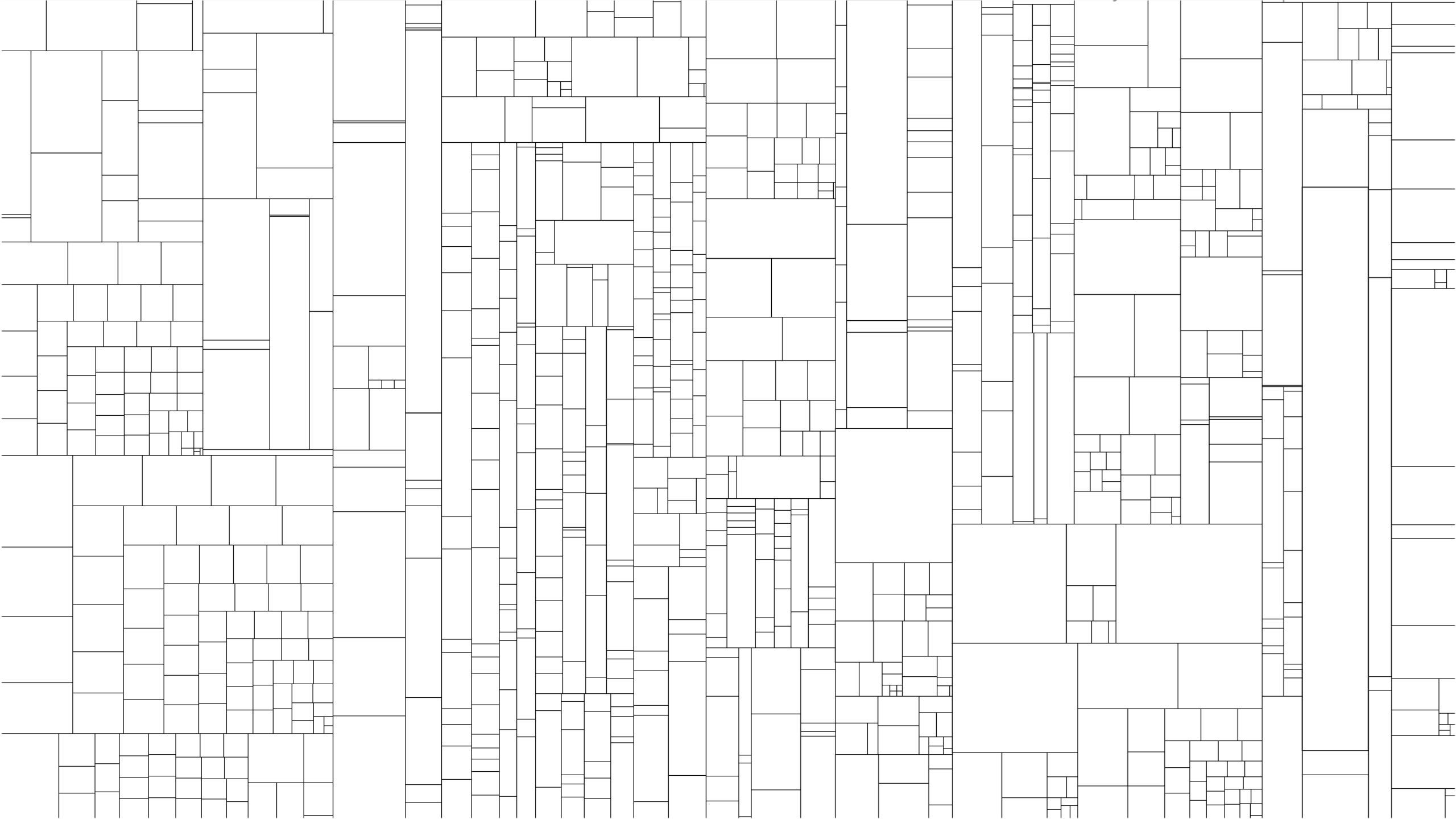
Opacity: 100 % Normal

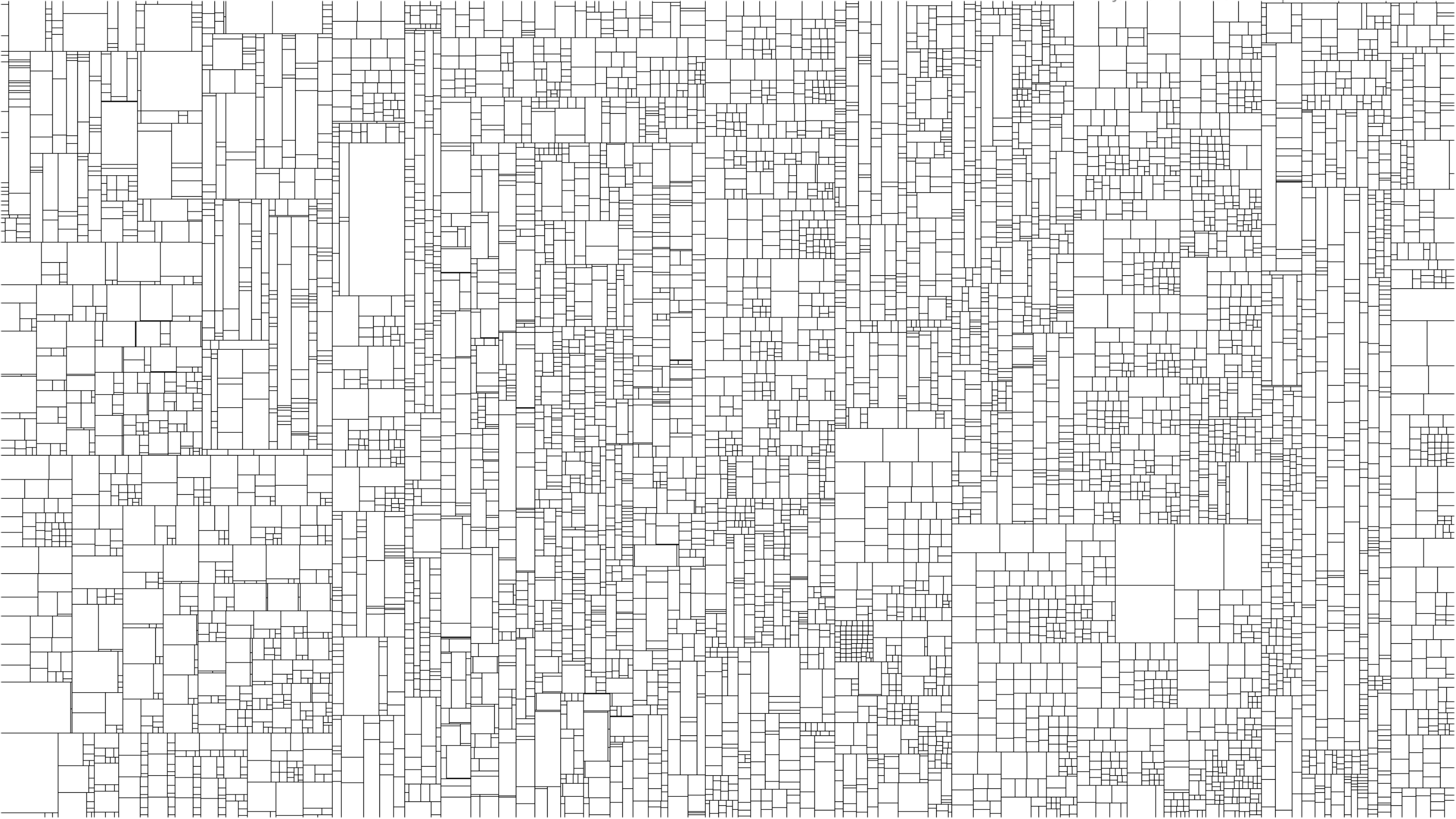


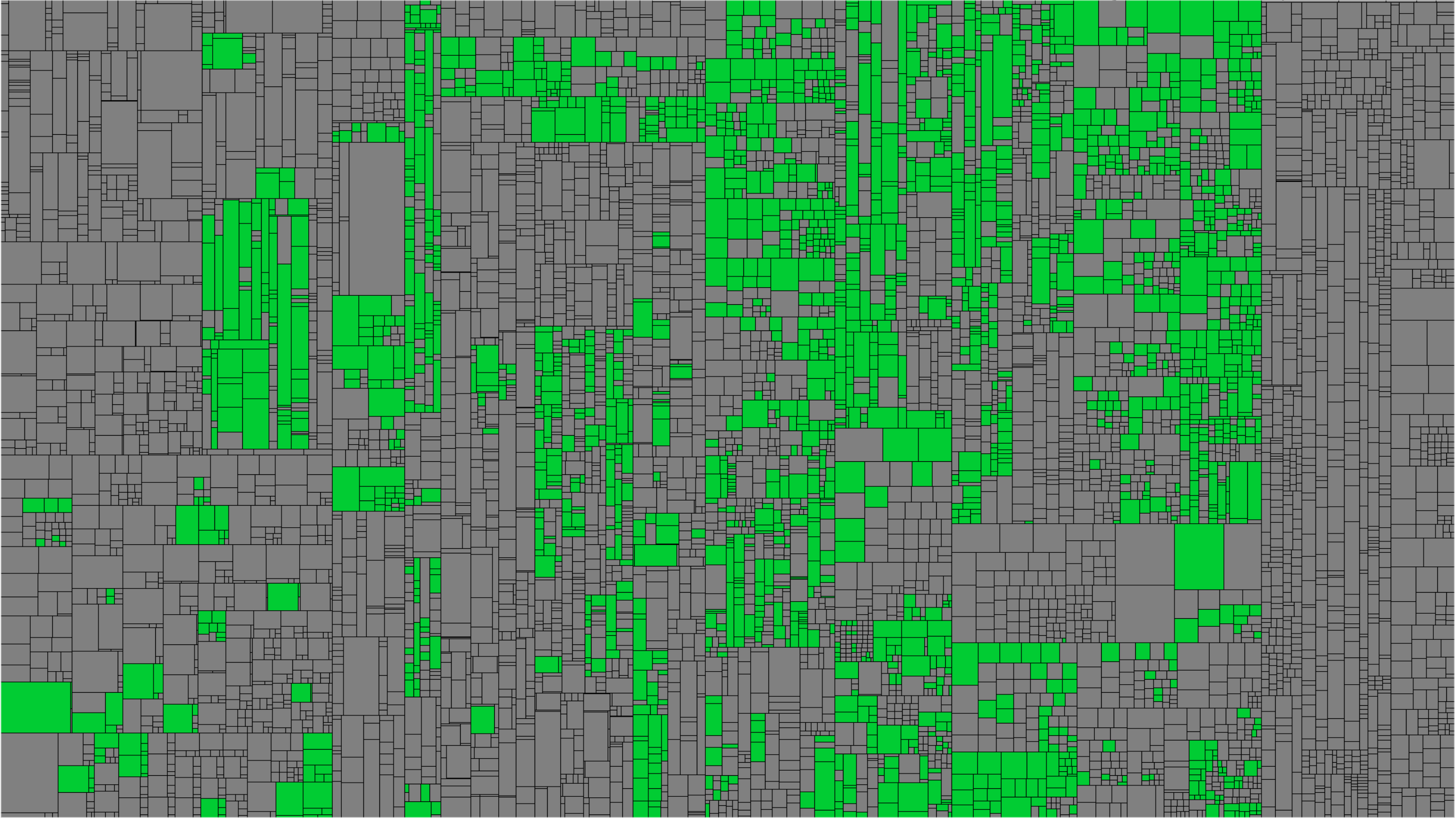
layer 1

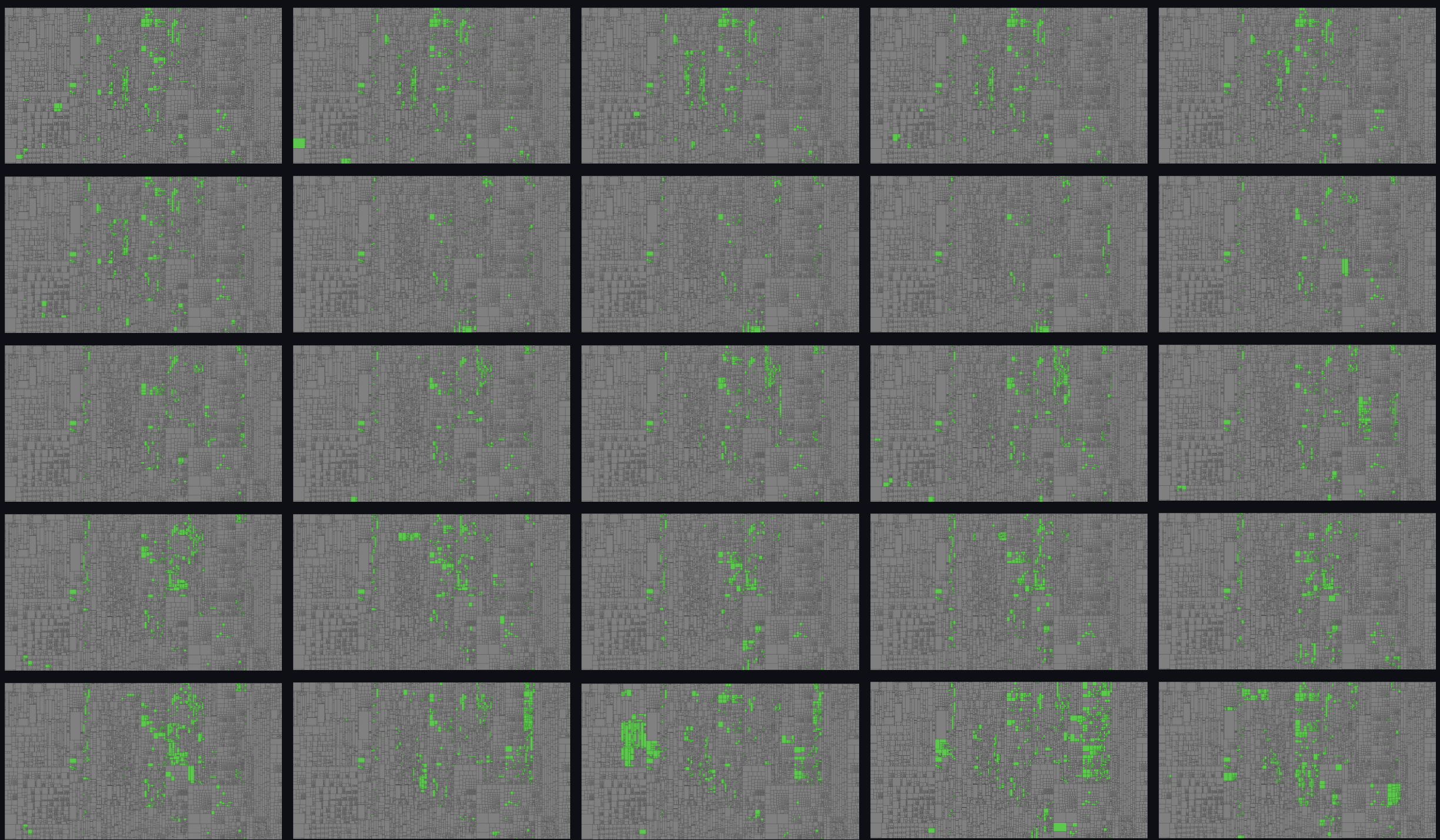
+ - [] T







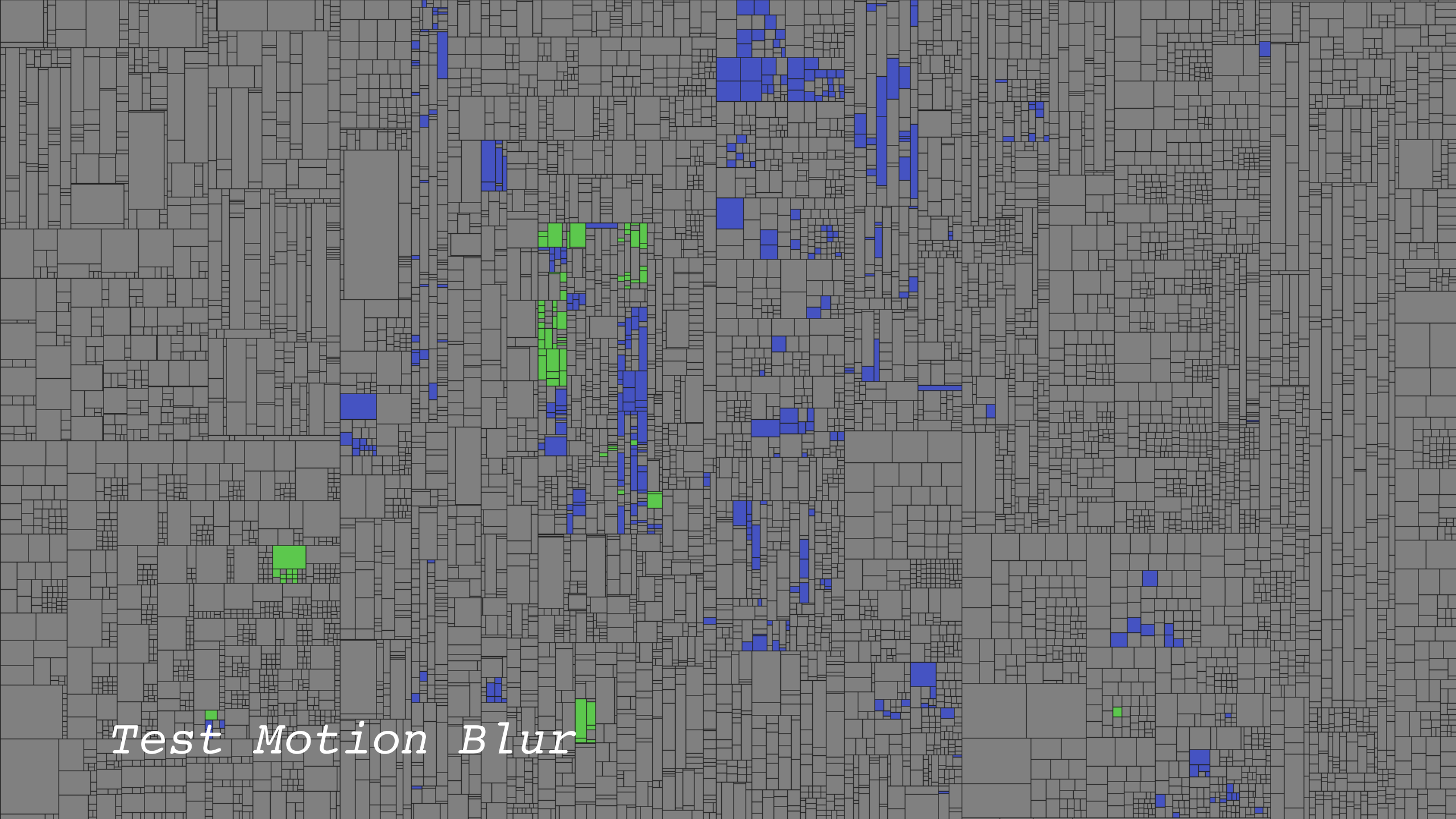


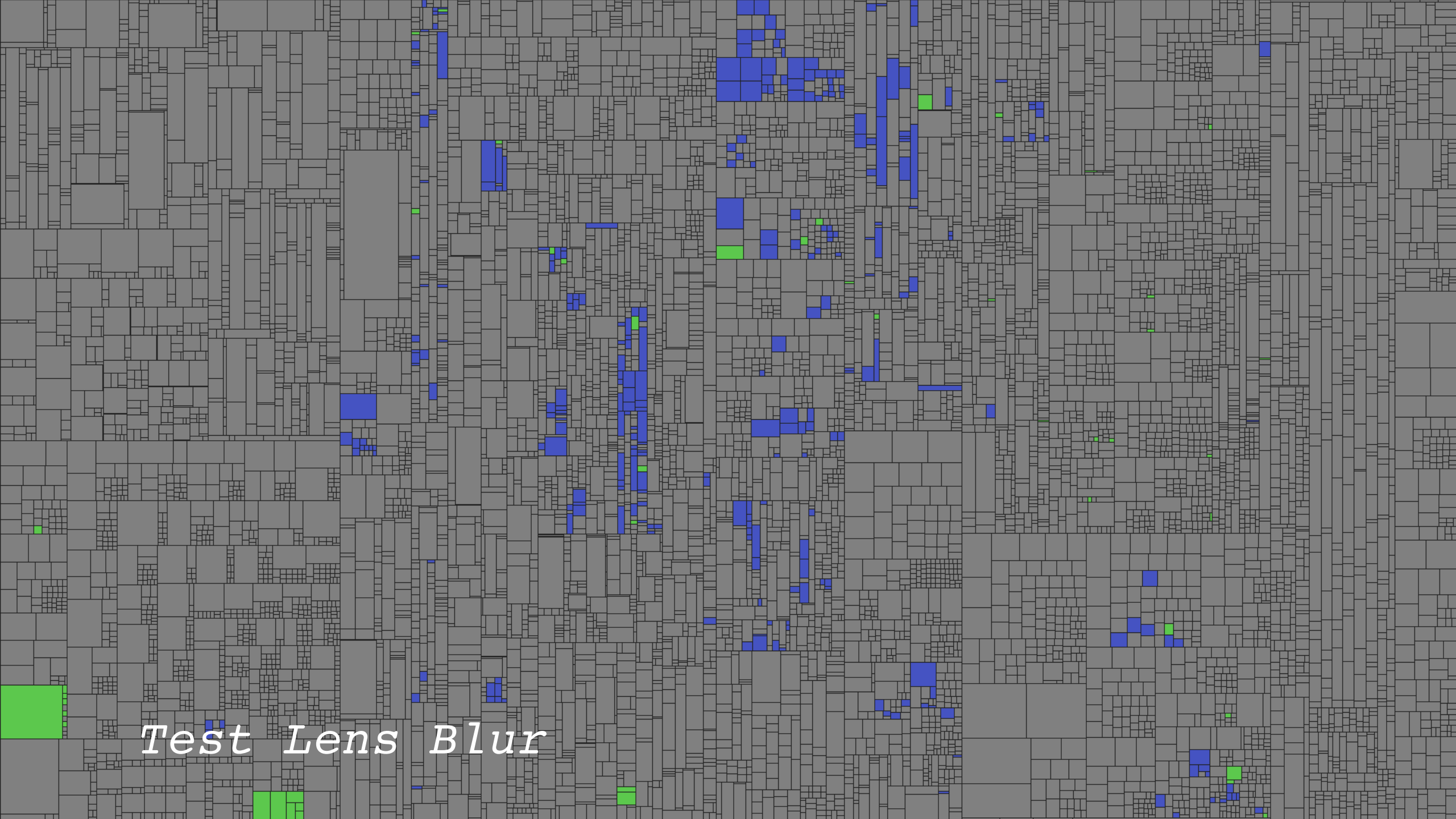


The image shows a grayscale cityscape with a dense grid of white lines overlaid on it. The grid cells vary in size, with smaller cells in more complex or textured areas and larger cells in smoother areas. Several cells are highlighted in a bright red color, scattered across the image. In the bottom-left corner, the text "Test Gaussian Blur" is written in a white, italicized serif font.

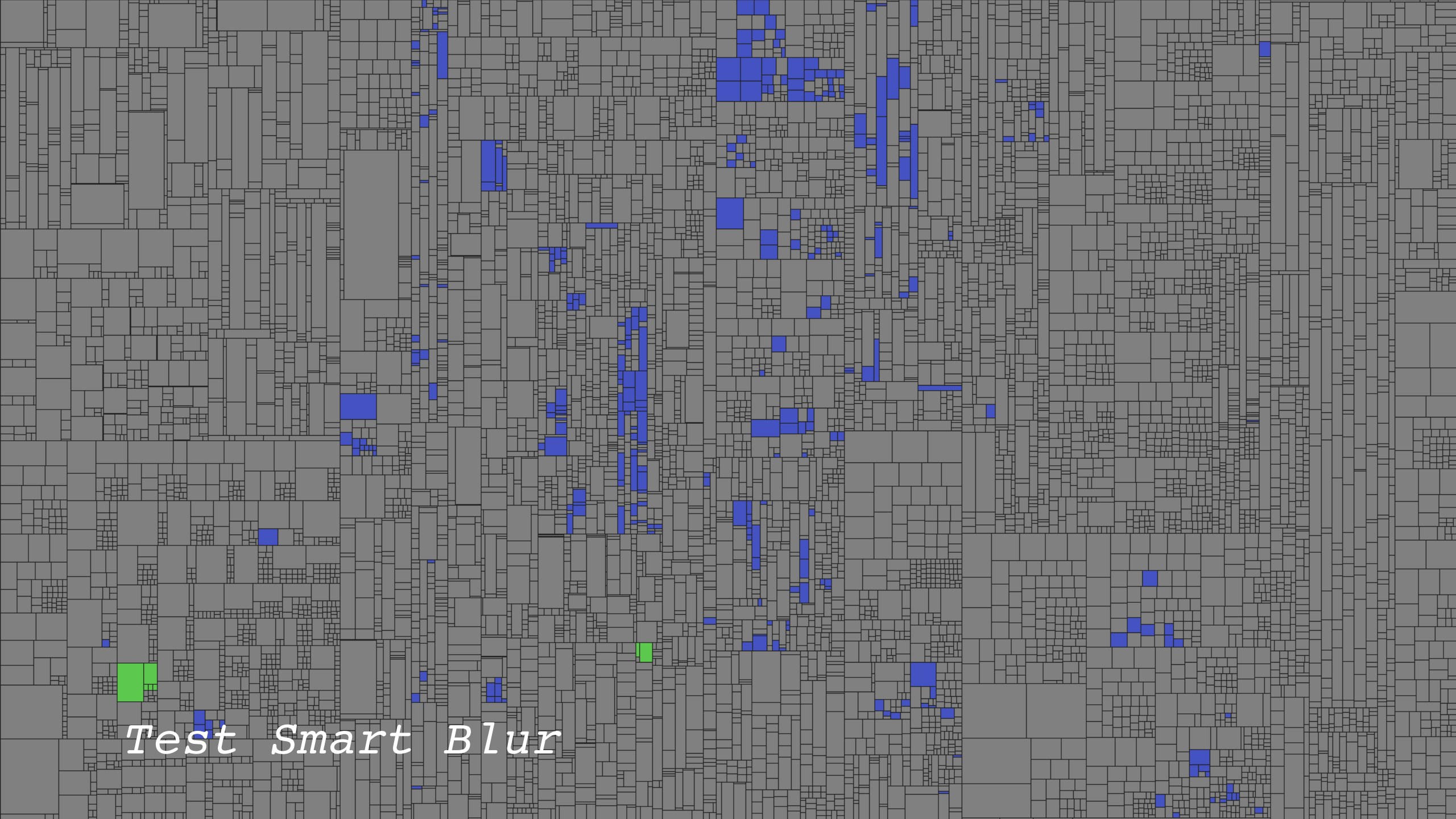
Test Gaussian Blur

Test Motion Blur

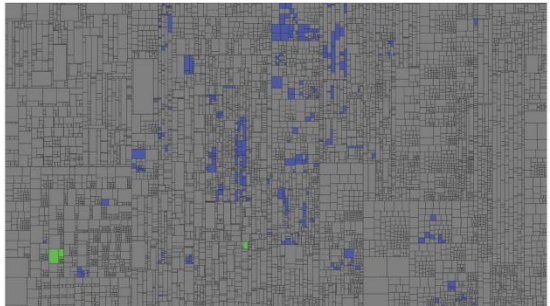
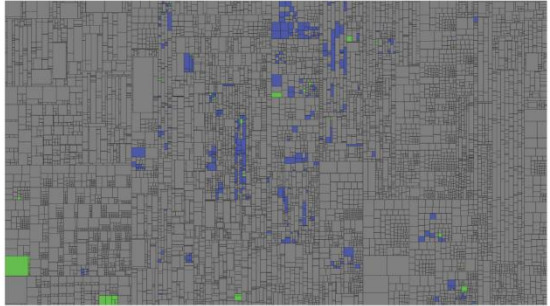
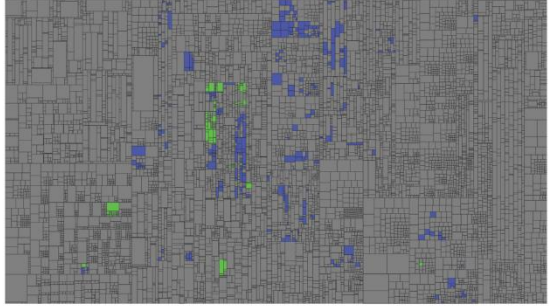
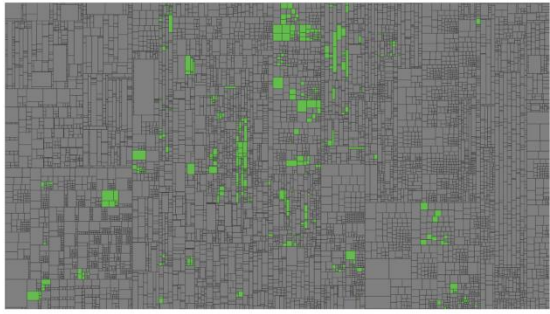




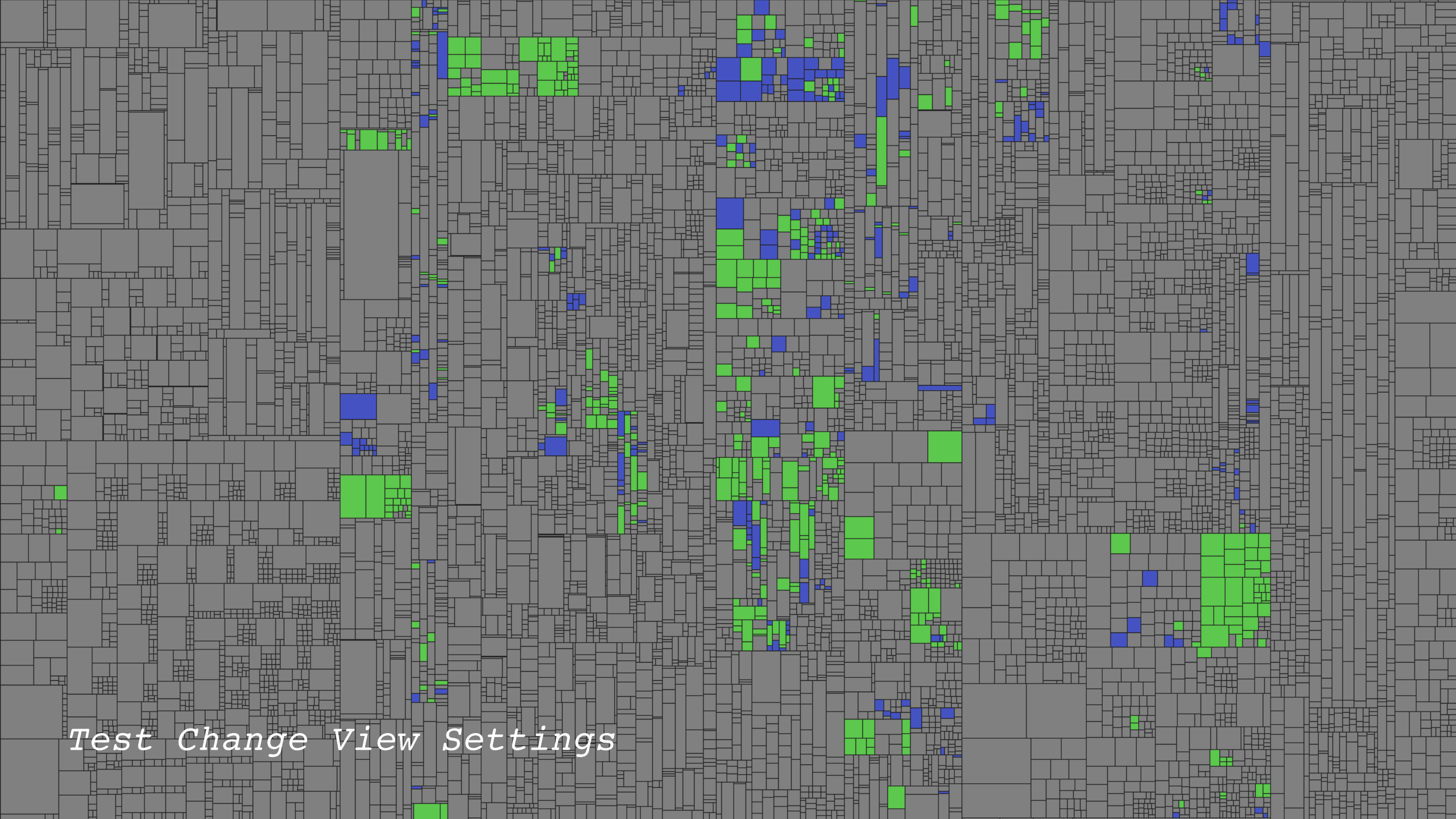
Test Lens Blur



Test Smart Blur



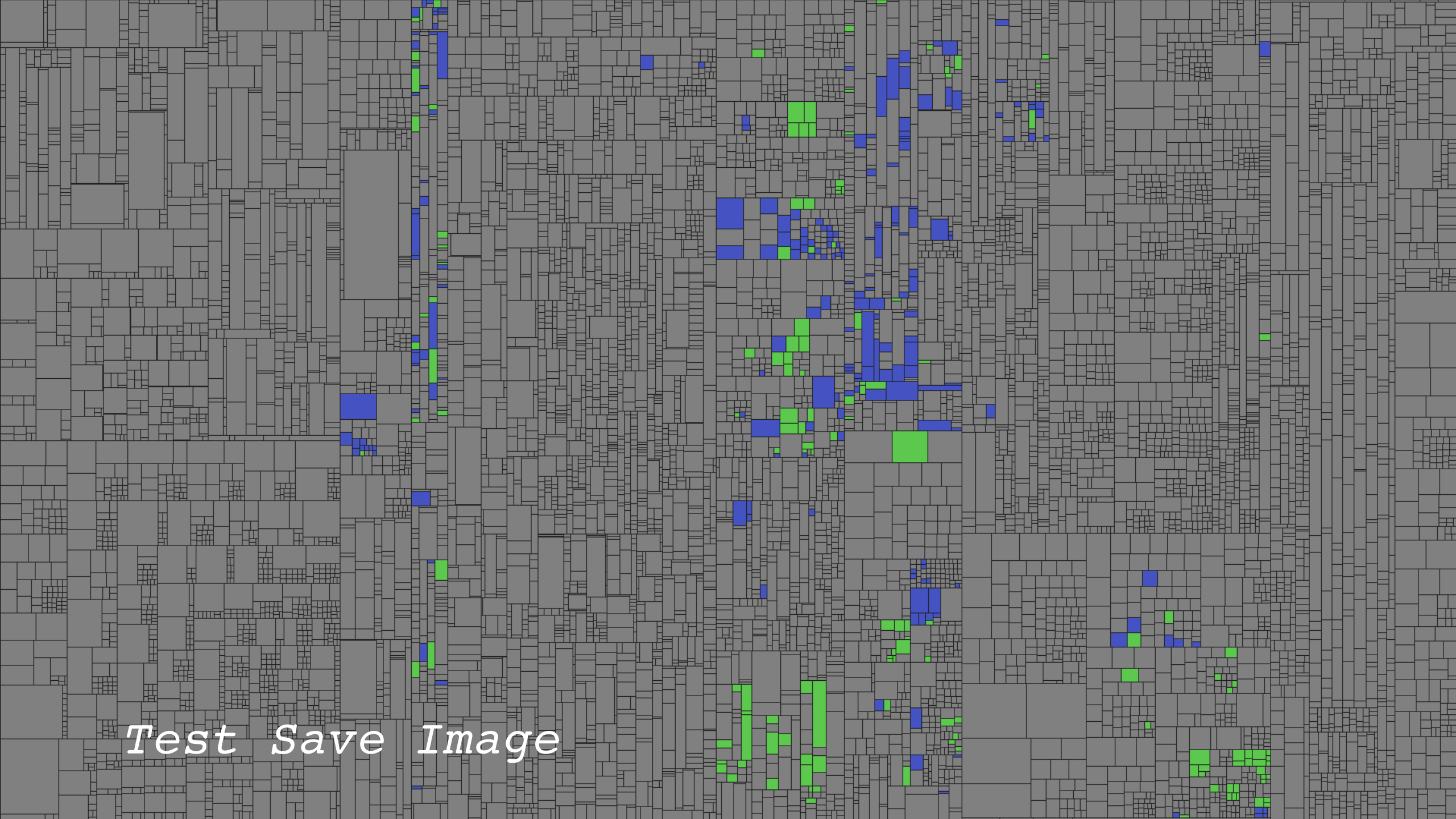
Test Create and Modify Selection



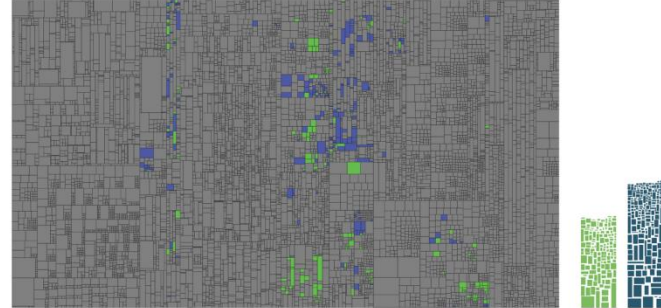
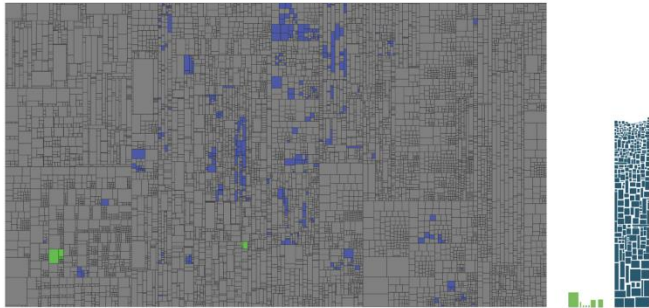
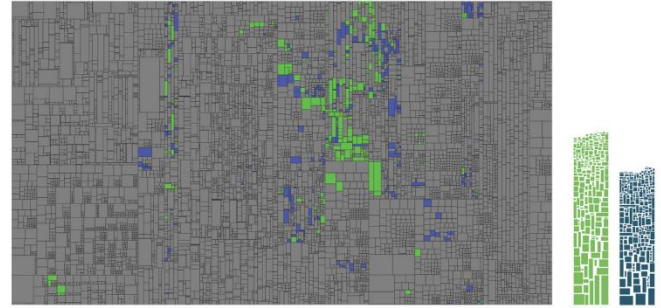
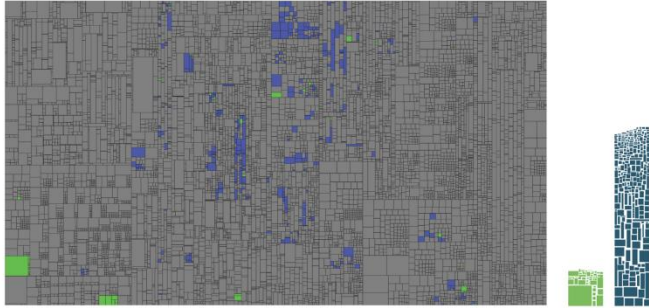
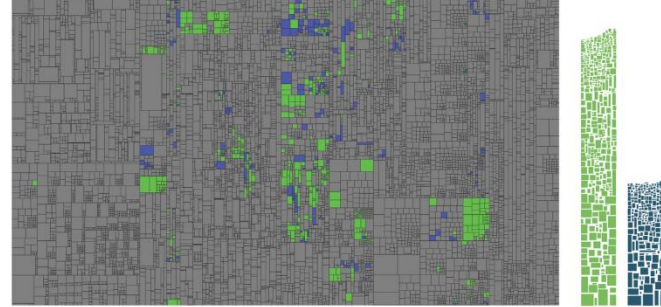
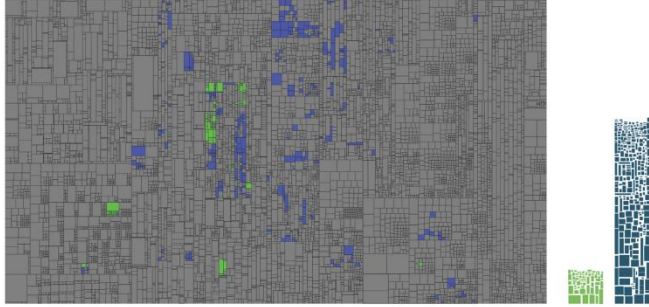
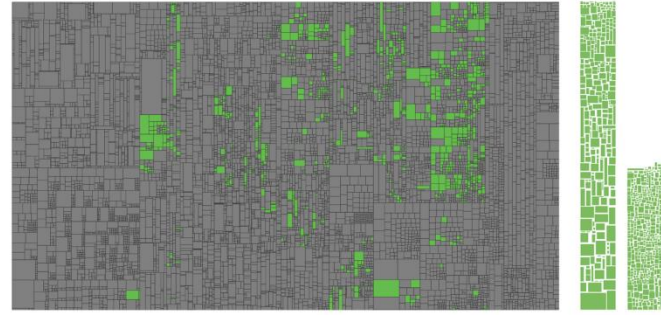
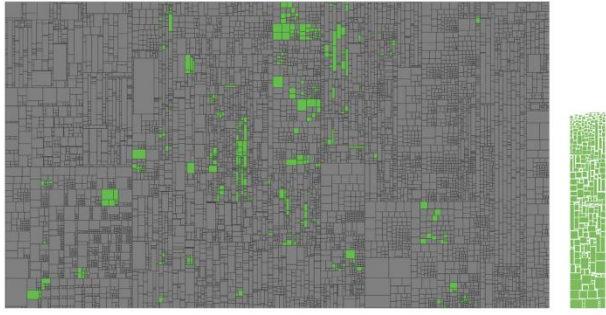
Test Change View Settings

Test Second Layer

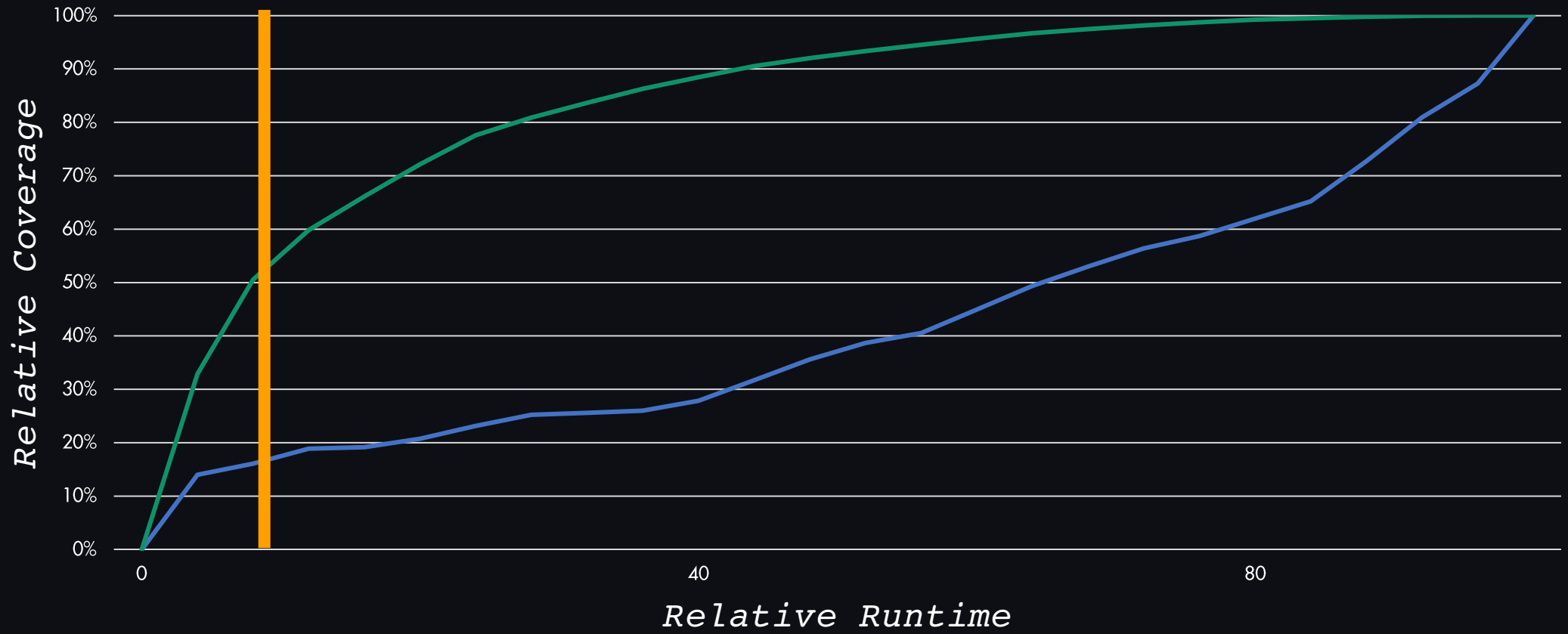
The image displays a dense, intricate network of nodes and connections, characteristic of a neural network visualization. The nodes are arranged in a grid-like pattern, with numerous small, interconnected units. The overall structure is complex and multi-layered. Overlaid on this network are several distinct clusters and patterns of highlighted nodes. These highlights are primarily in two colors: a vibrant green and a bright blue. The green highlights are more numerous and form larger, more contiguous blocks, particularly in the upper and middle-right sections of the network. The blue highlights are more scattered and appear as smaller, isolated clusters or thin lines connecting specific nodes. The background of the network is a light gray, which makes the colored nodes stand out. The text 'Test Second Layer' is positioned in the bottom-left corner, written in a white, italicized serif font.

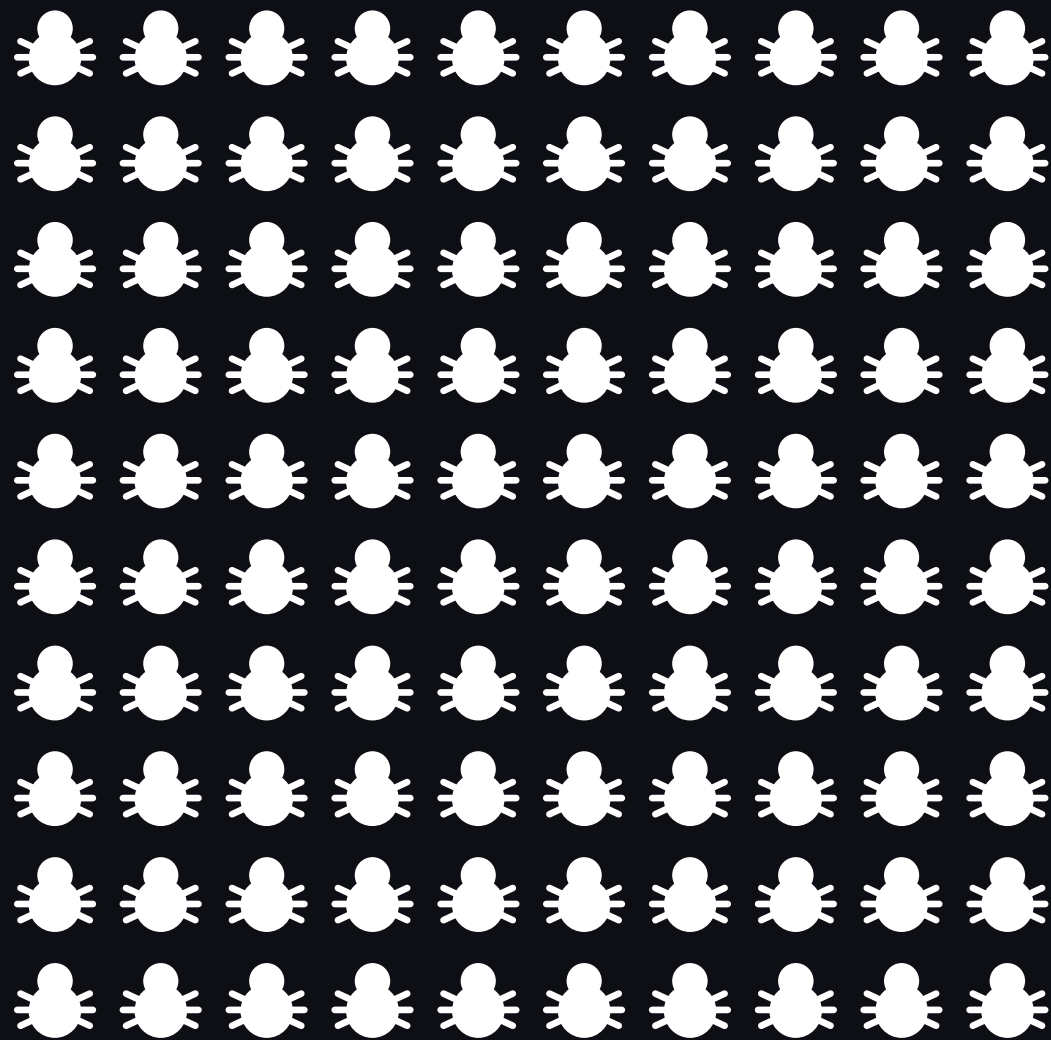
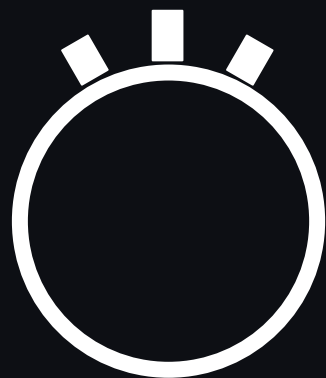


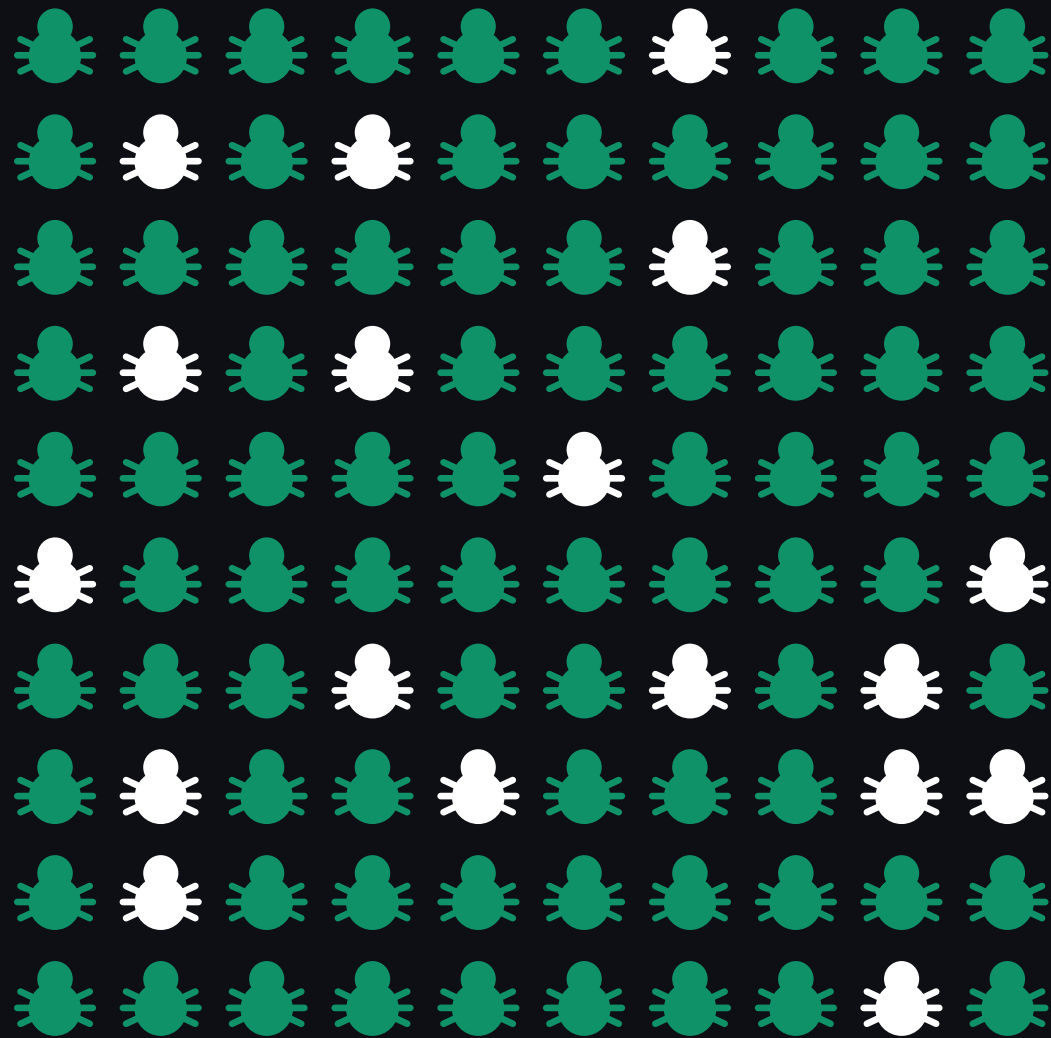
Test Save Image

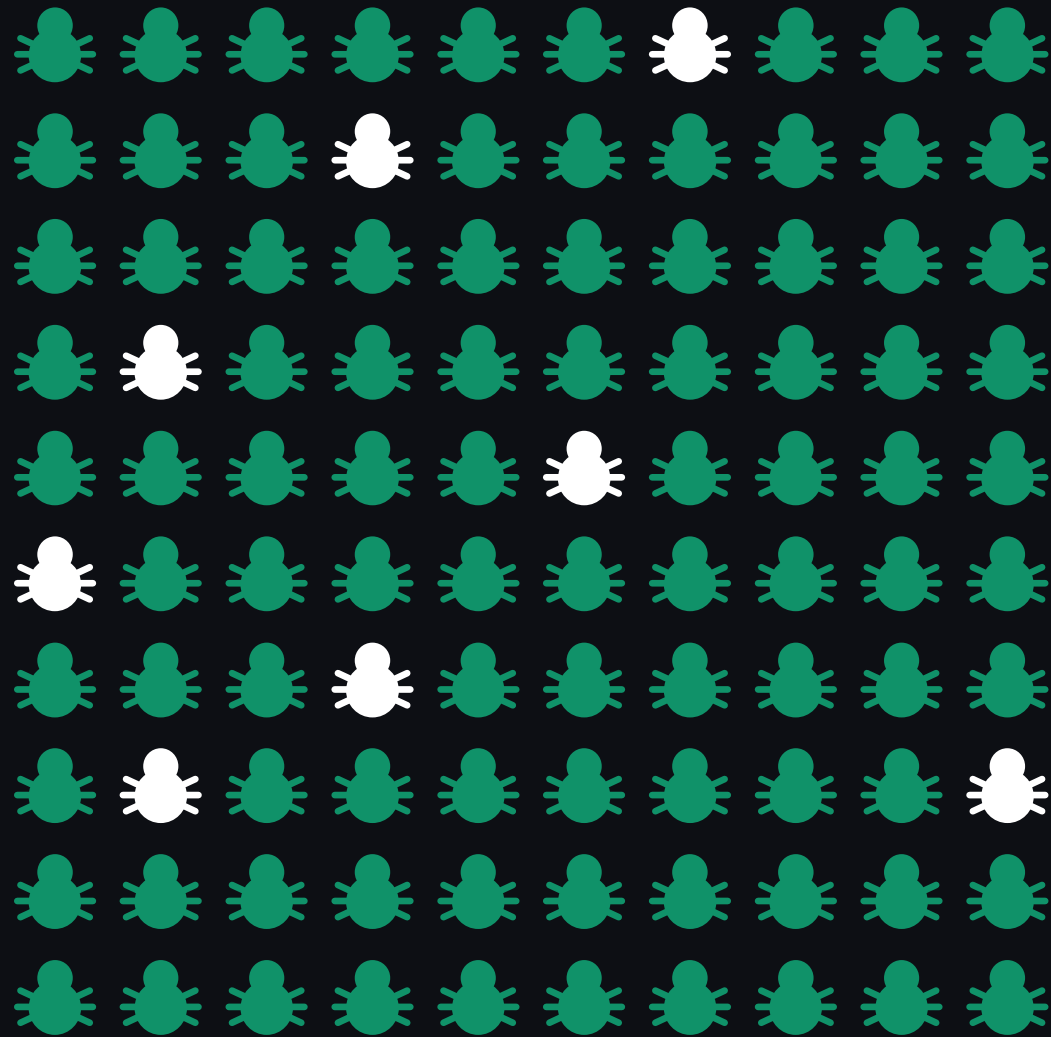


Time vs Code Coverage









TEST-IMPACT-ANALYSIS

Test selection w.r.t. code changes

90% of bugs found in 2% time

Requires continuous recording of coverage and tight integration with test automation framework.

Higher speedup & higher effort

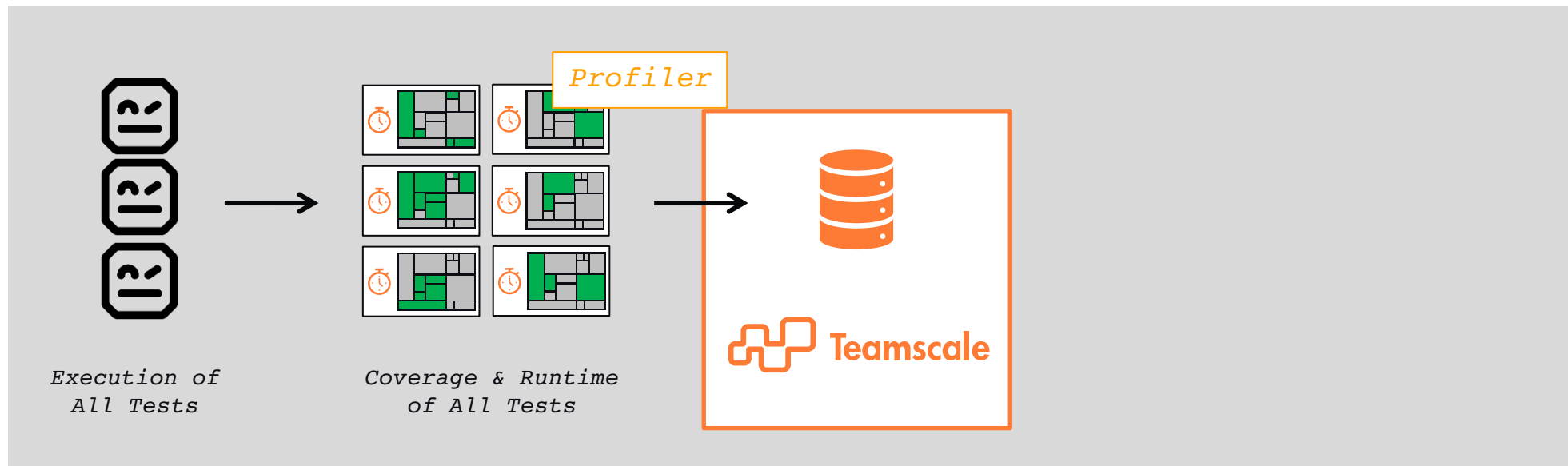
PARETO-OPTIMIZATION

Tests selection independent of code changes

90% of bugs found in 11% time

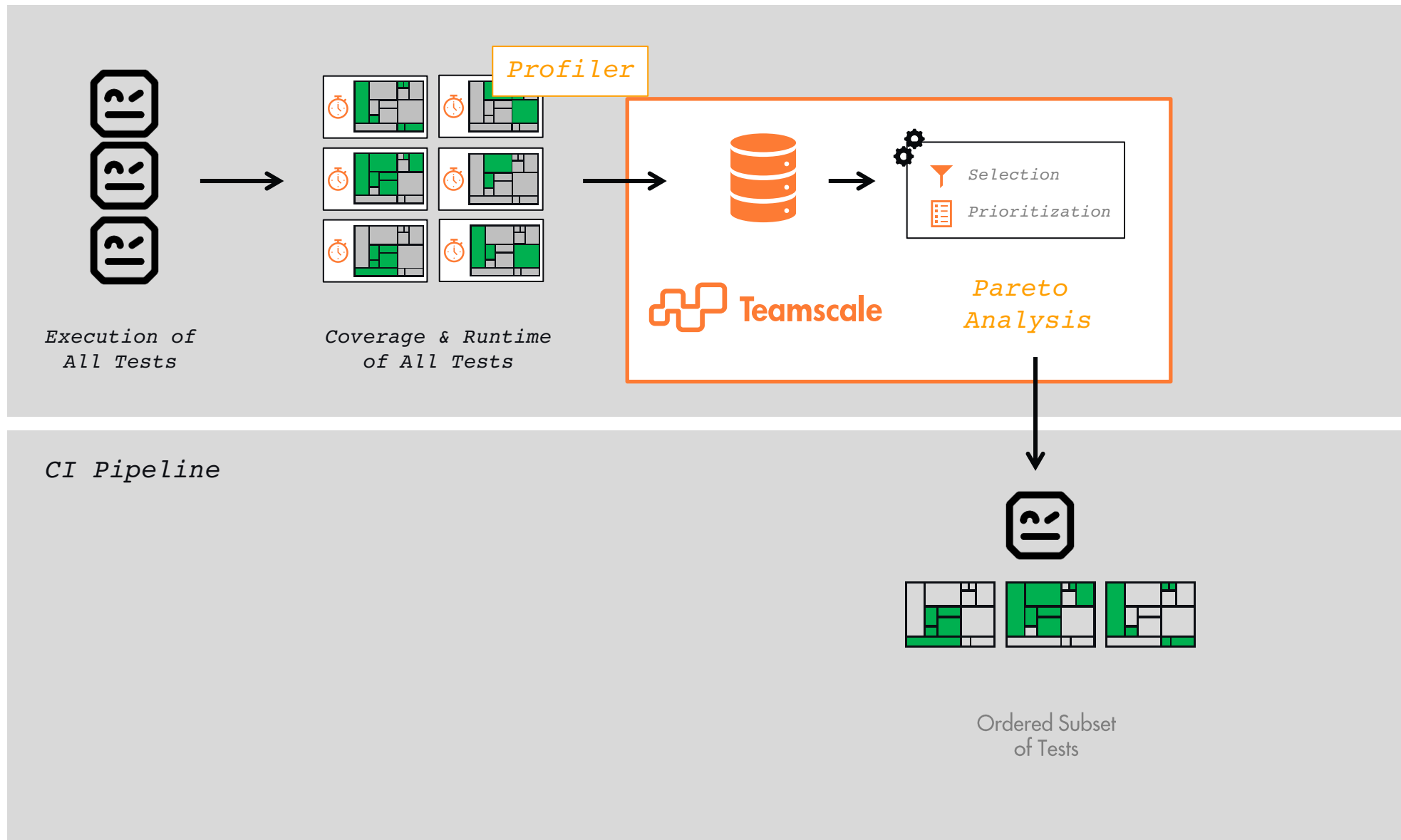
Record coverage once (per quarter)

Smaller effort & higher applicability

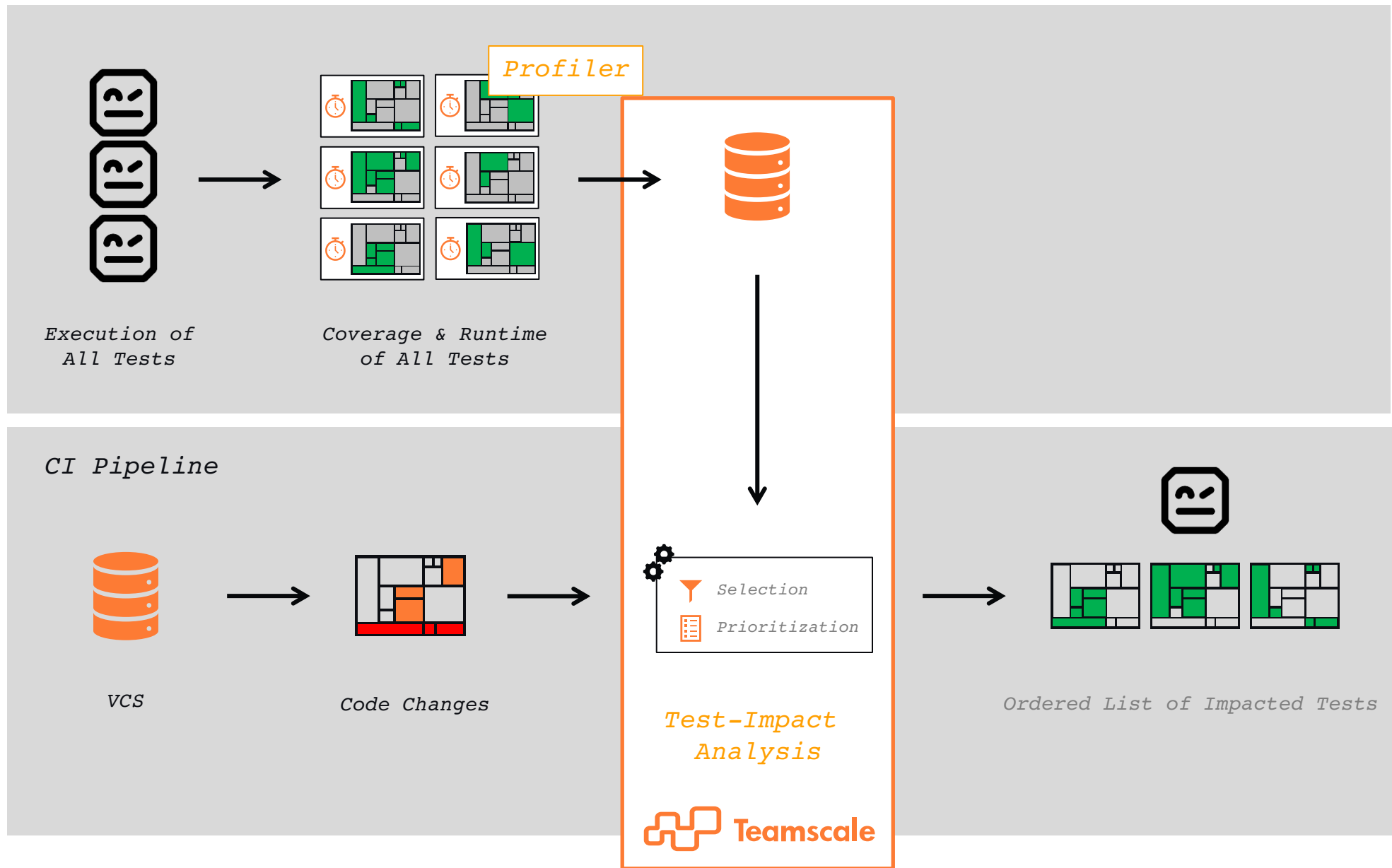


```
> robot --listener "teamsclerobotplugin.TiaRobotListener;partition=Robot Tests" test-automation/src/test/robot_framework/tests/
```

*Profiler: <https://github.com/cqse/teamscale-jacoco-agent/>
Robot Plugin: pypi.org/project/teamsclerobotplugin/*



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Robot Plugin: pypi.org/project/teamsclerobotplugin/



THANKS!
QUESTIONS?

Dr. Elmar Juergens

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