


80/20 Optimierung von Test-Suites


Erfahrungen aus Forschung und Praxis



com.teamscale.test.ui.architecture.ArchitecturePerspectiveTest - testViewingArchitectureElements

Runs: 1/227

 Errors: 0

 Failures: 0

- ▼   com.teamscale.test.ui.architecture.ArchitecturePerspectiveTest [Runner: JUnit 5]
 -  testViewingArchitectureElements
 -  createArchitectureTest
 -  testTimetravelMode
 -  testUndoRedo
 -  testArchitecturePolicyUpdate
 -  testOpenCodeOfOrphans

 Failure Trace



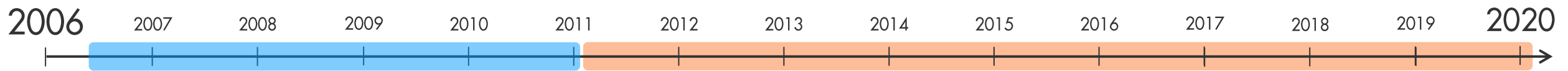


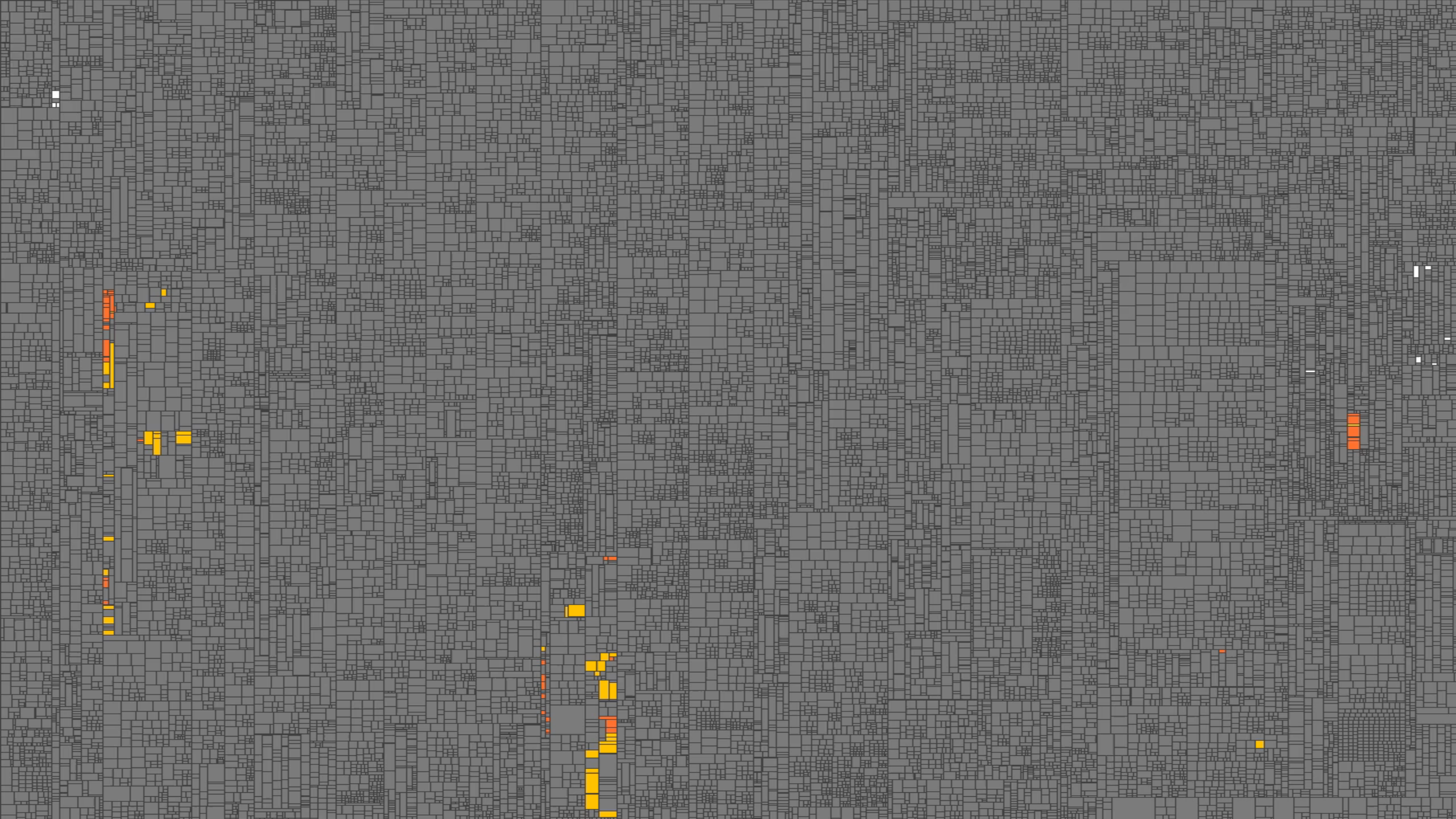


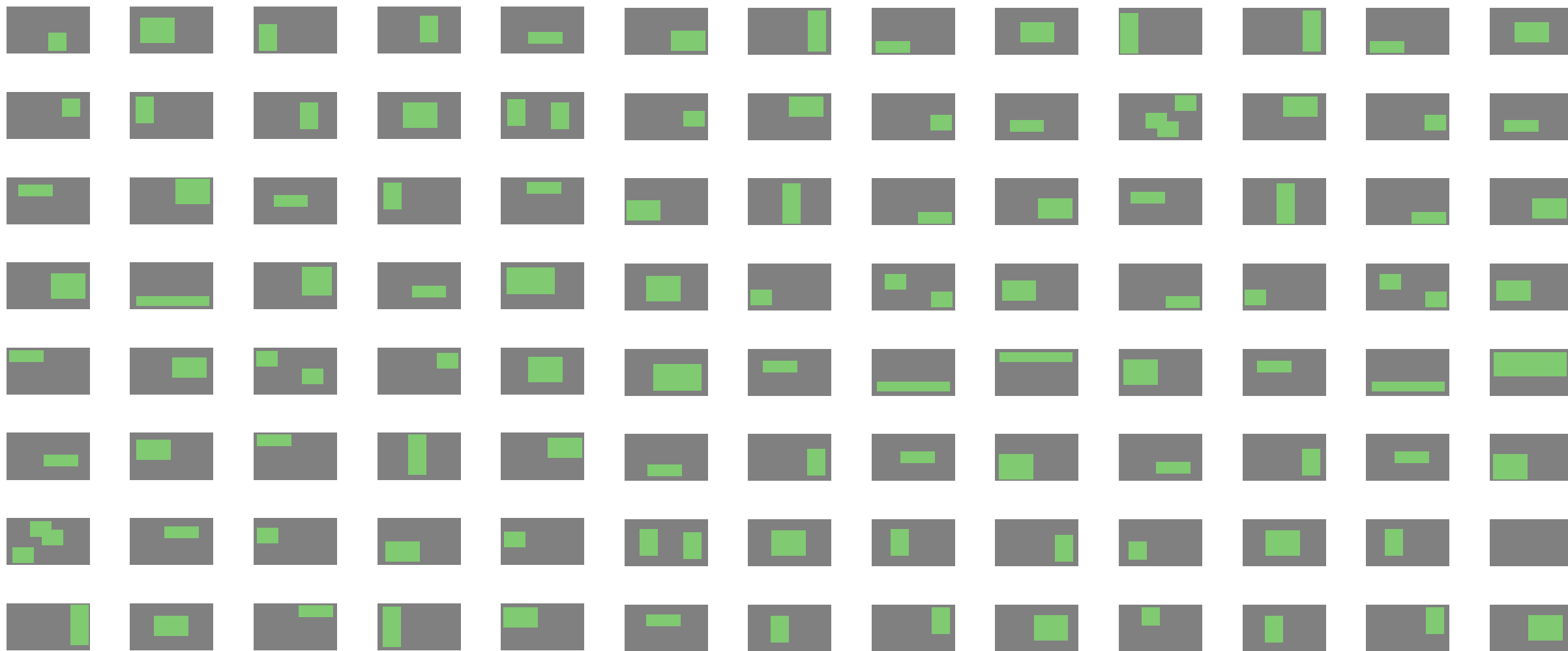
TUM



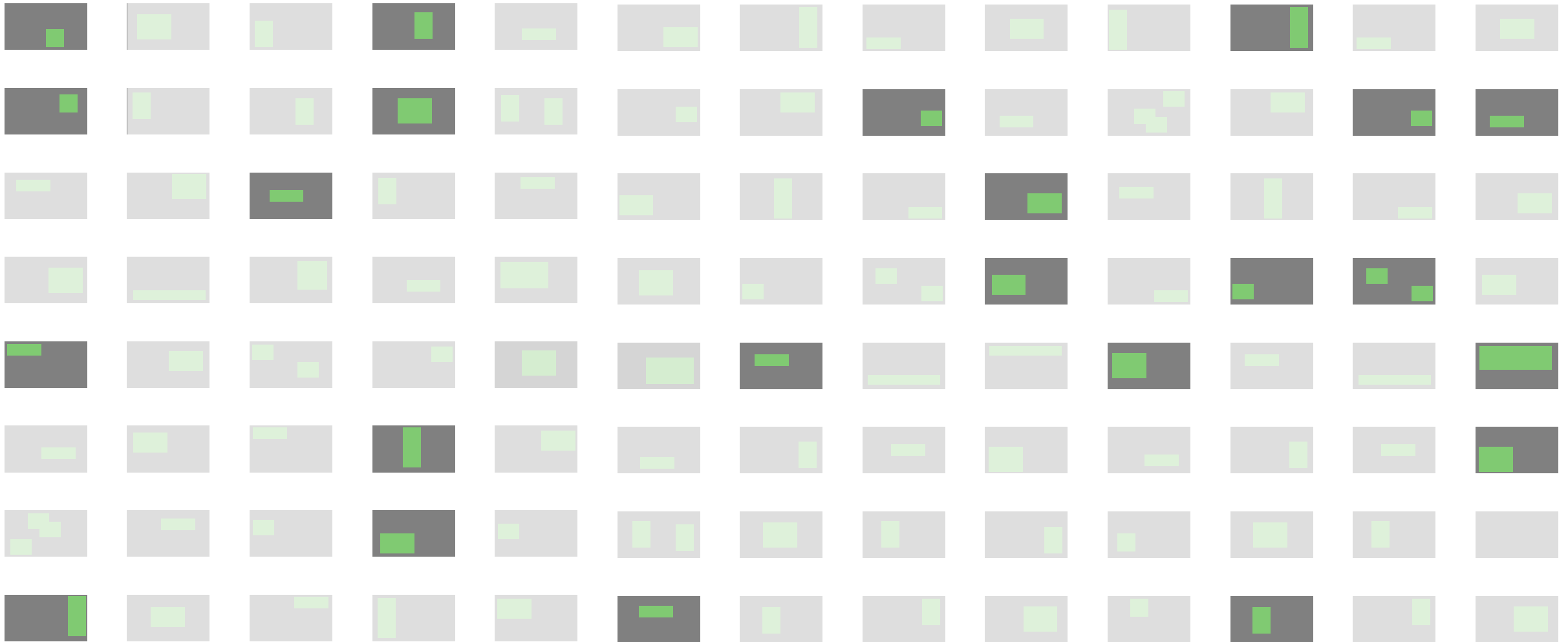
CQSE



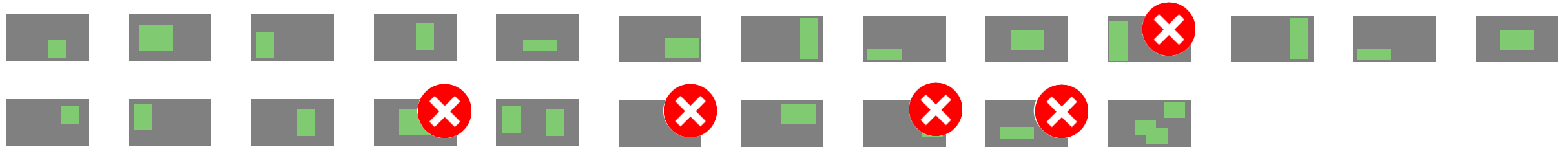




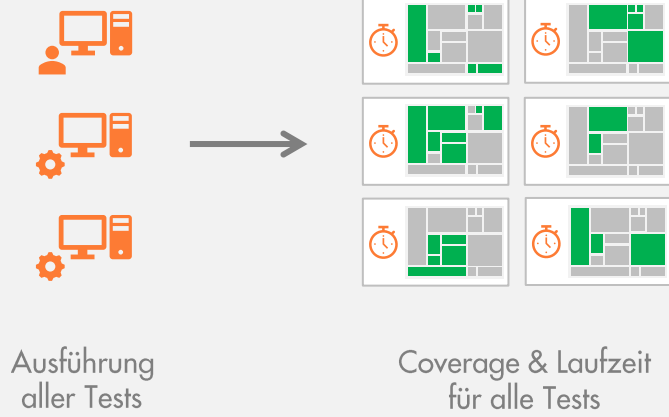
Schritt 1: Selektion betroffener Testfälle



Schritt 2: Priorisierung selektierter Testfälle

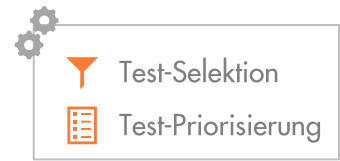
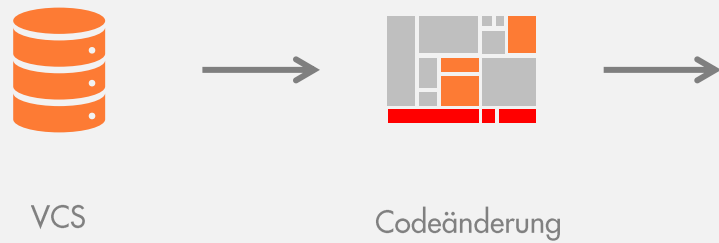


Initiale Aufzeichnung aller Tests



Test-Impact-Analyse

Testausführung nach Änderungen

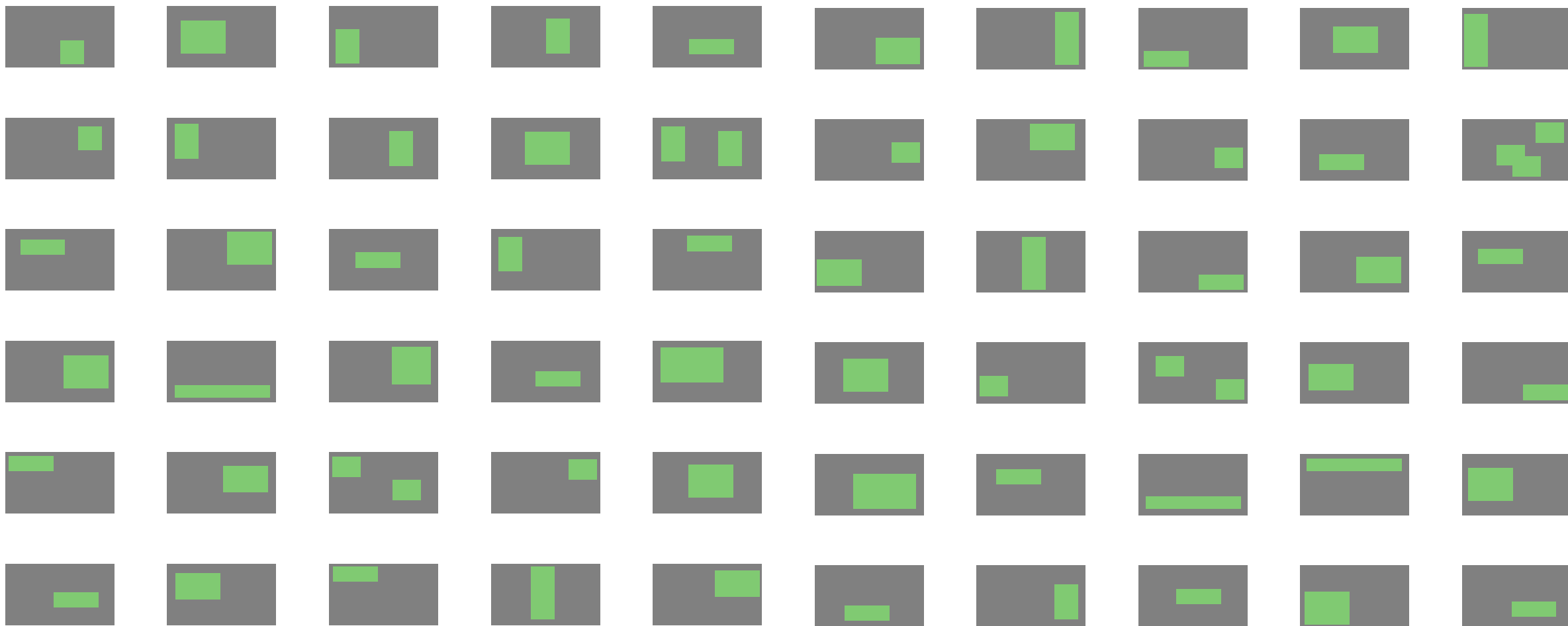


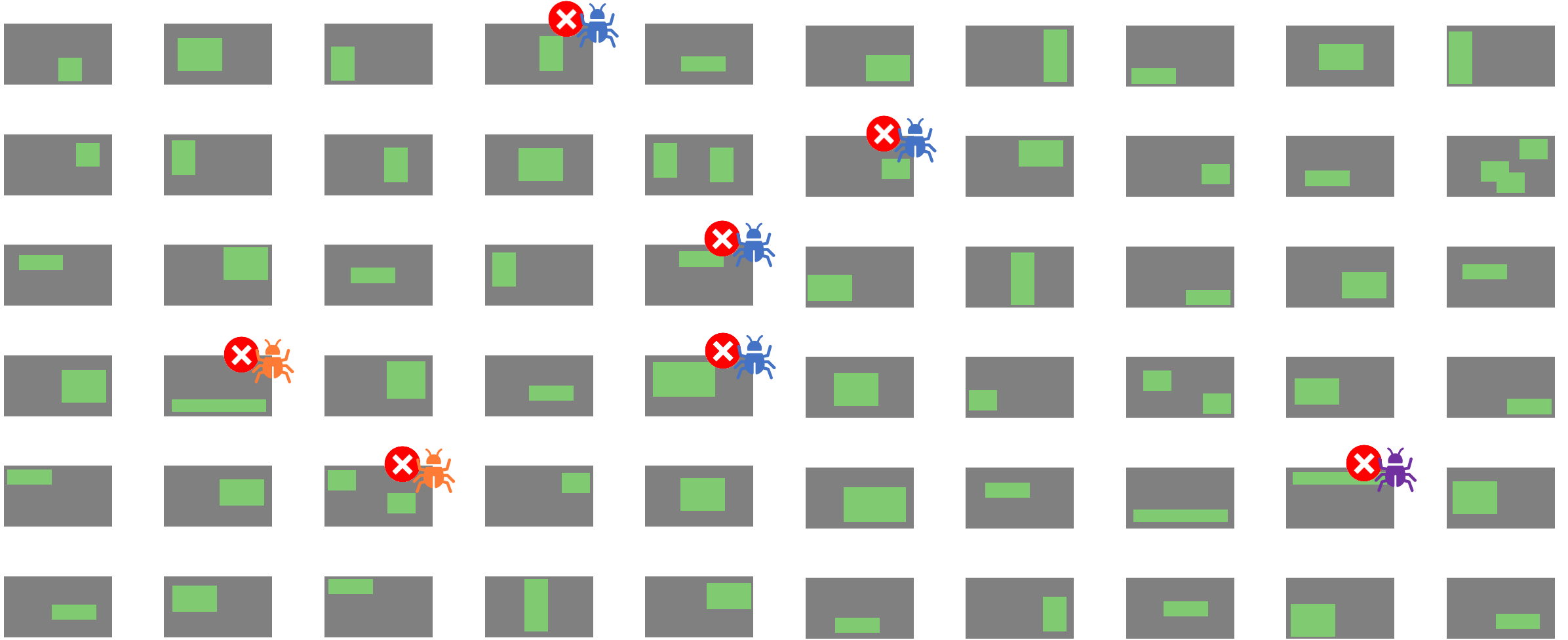
Test-Impact-Analyse



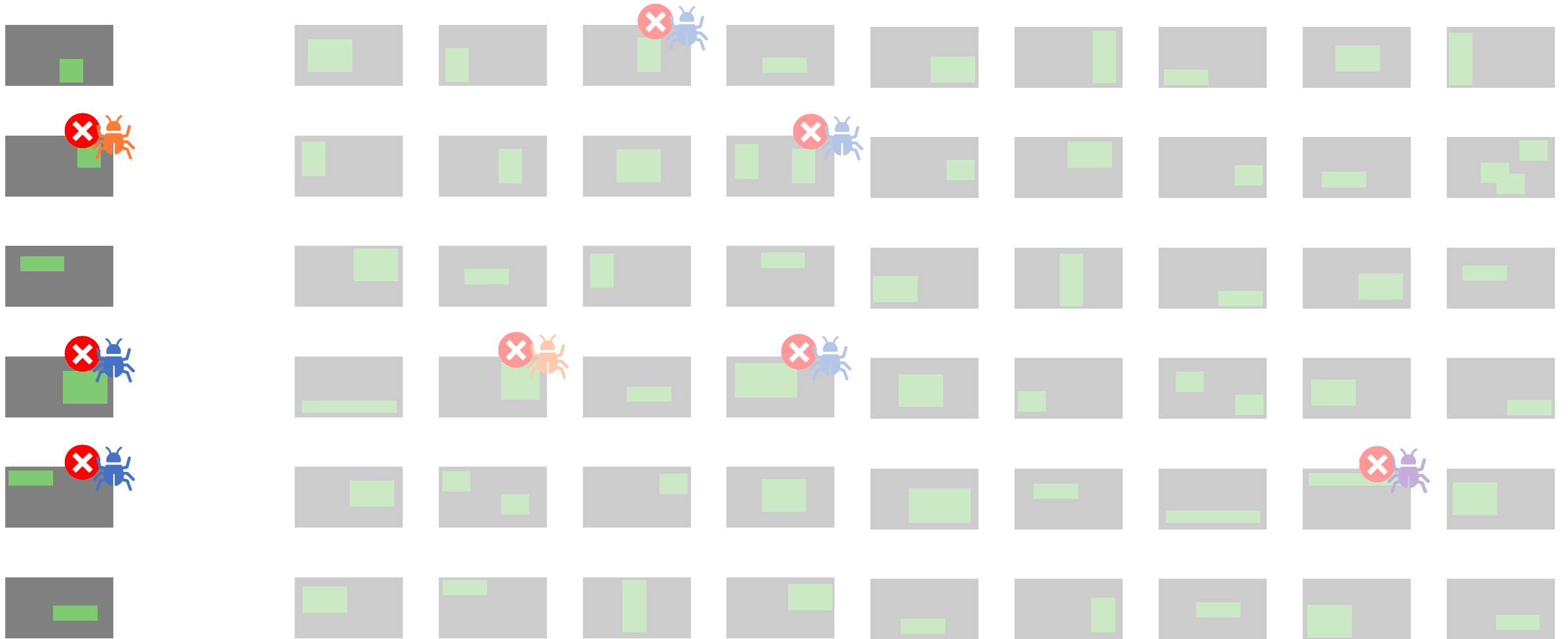
Änderungsrelevante und
sortierte Testfälle

Geht das auch einfacher?





Pareto-Testing: 80/20 Optimierung



Sample Only the Active Layer/Mask

Untitled1 x Picture1.png x

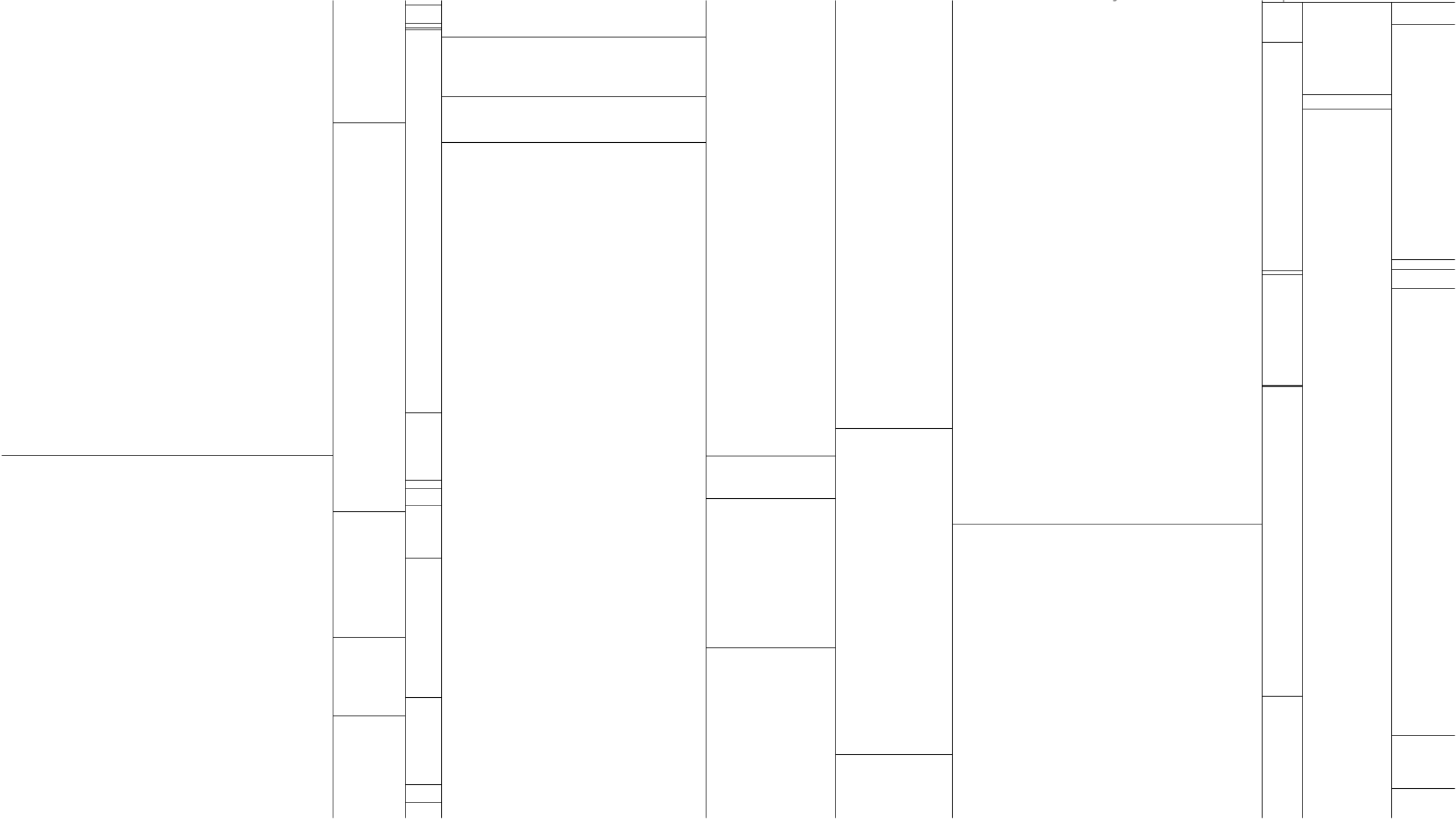


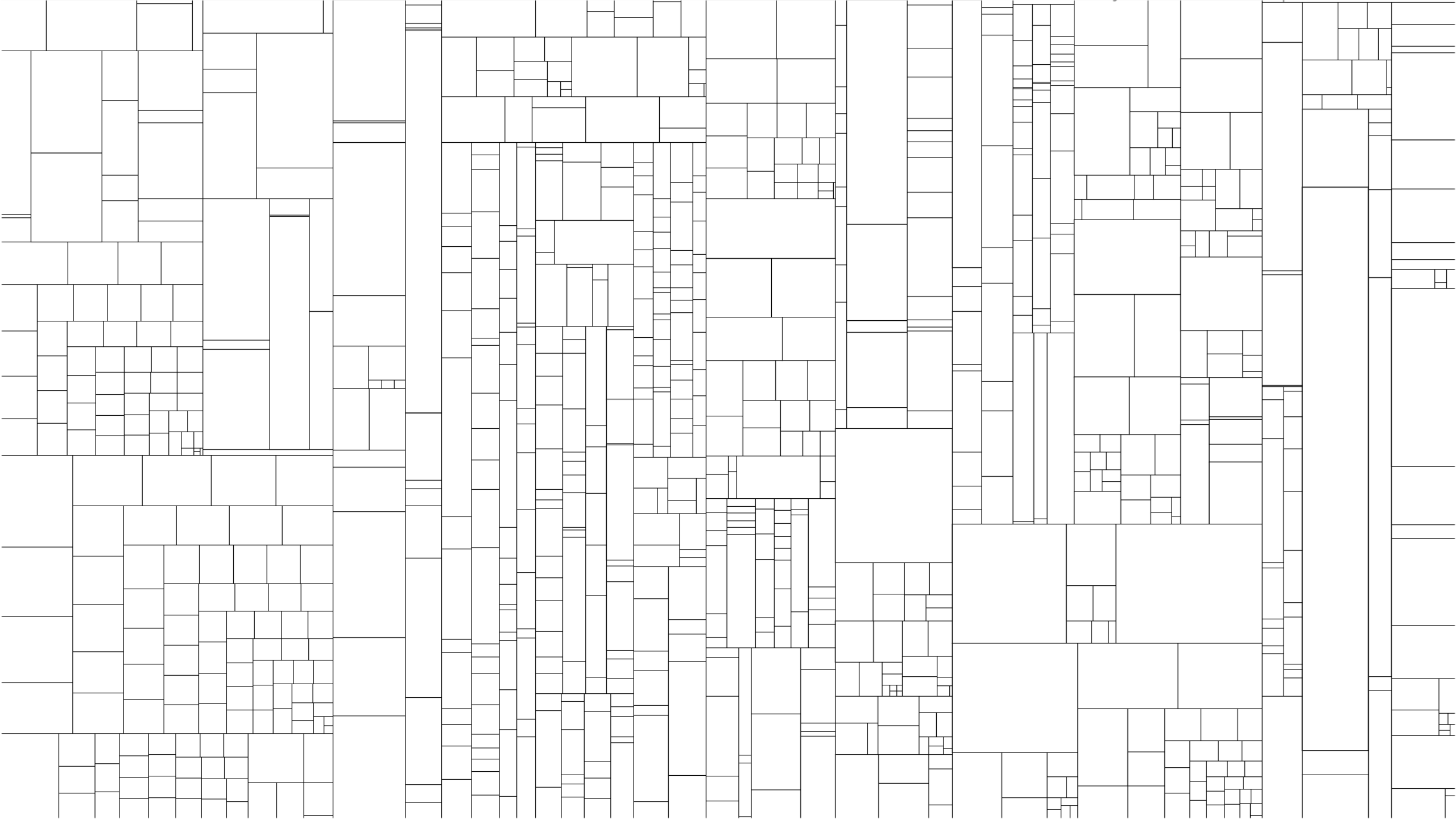
Layers

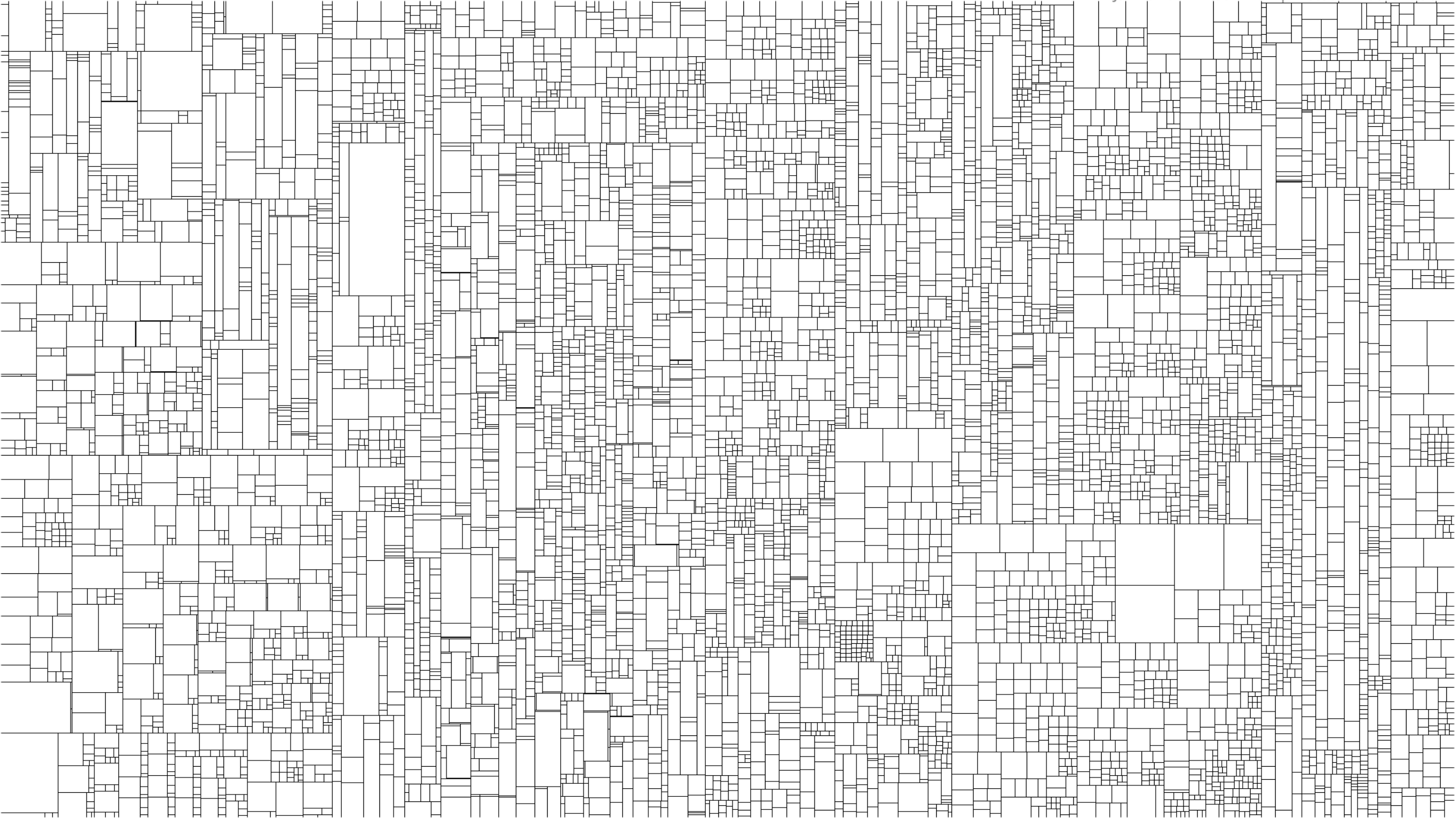
Opacity: 100 % Normal

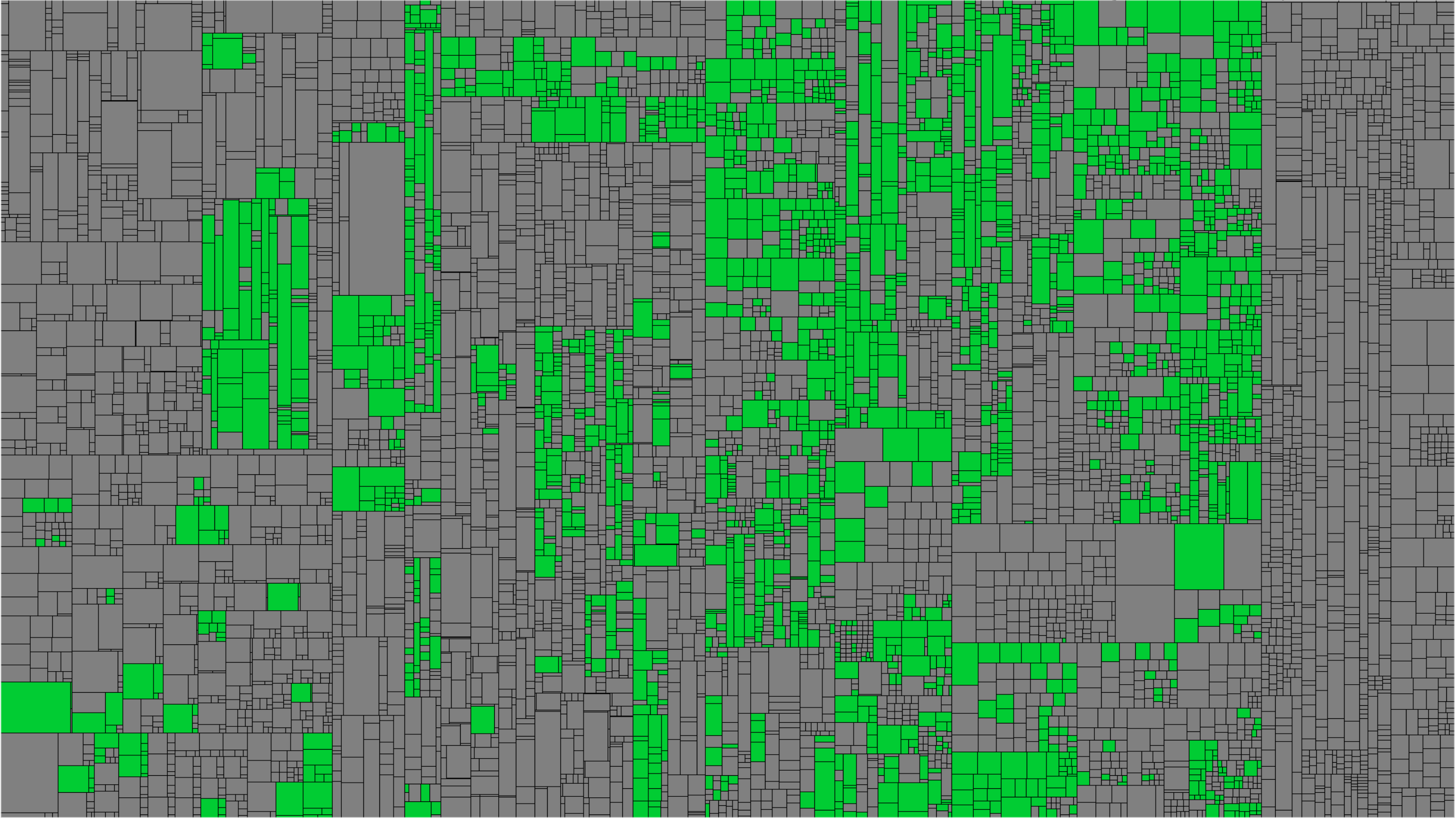
layer 1

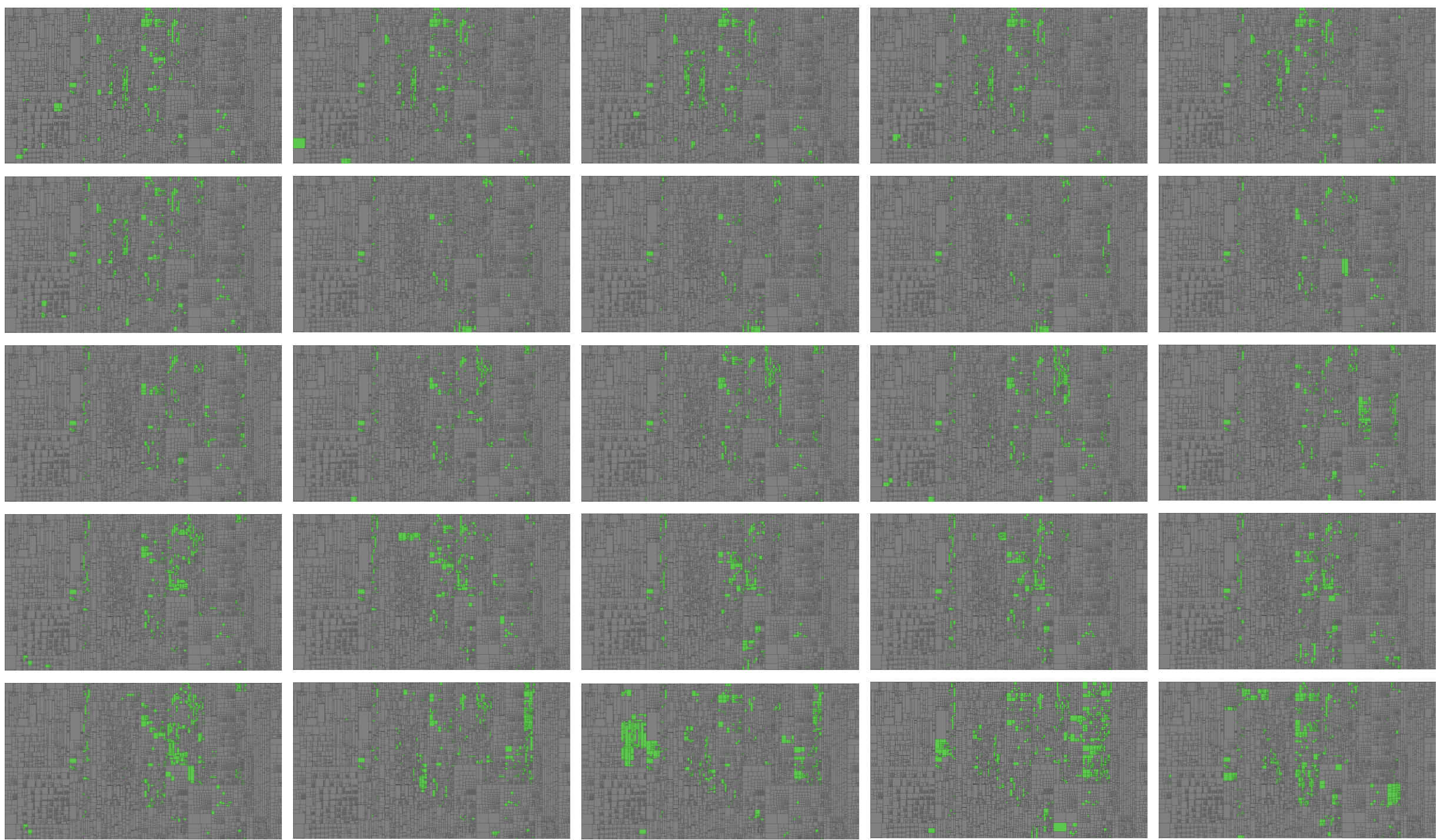




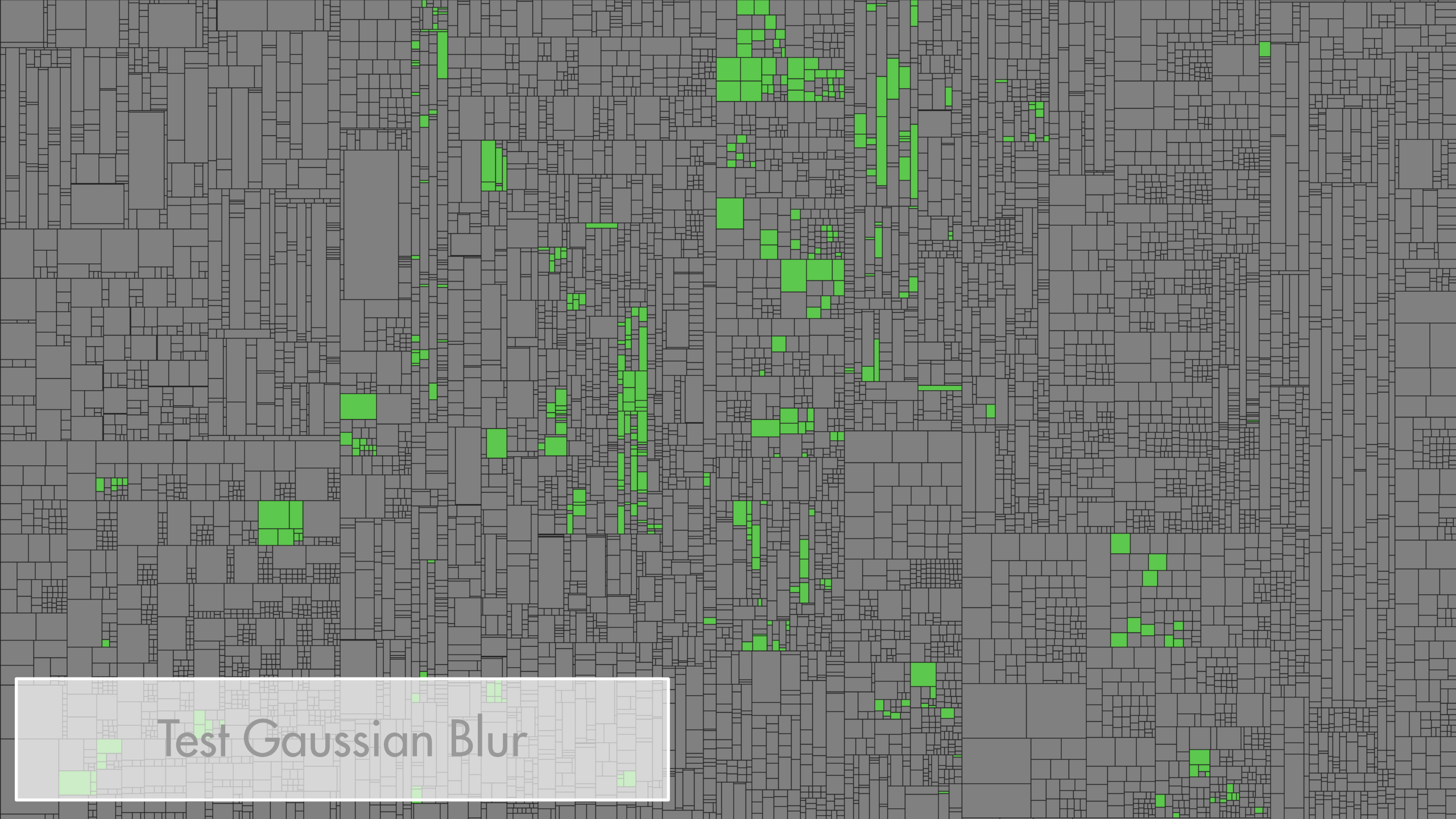








**Welchen Einfluss hat die Reihenfolge der
Ausführung von Software Tests?**



Test Gaussian Blur

The image consists of a dense, overlapping grid of gray rectangles. Scattered throughout this grid are several smaller rectangles in blue and green. The blue rectangles are more numerous and appear in various sizes and orientations. The green rectangles are fewer and also vary in size. The overall effect is a complex, textured pattern of overlapping shapes.

Test Lens Blur

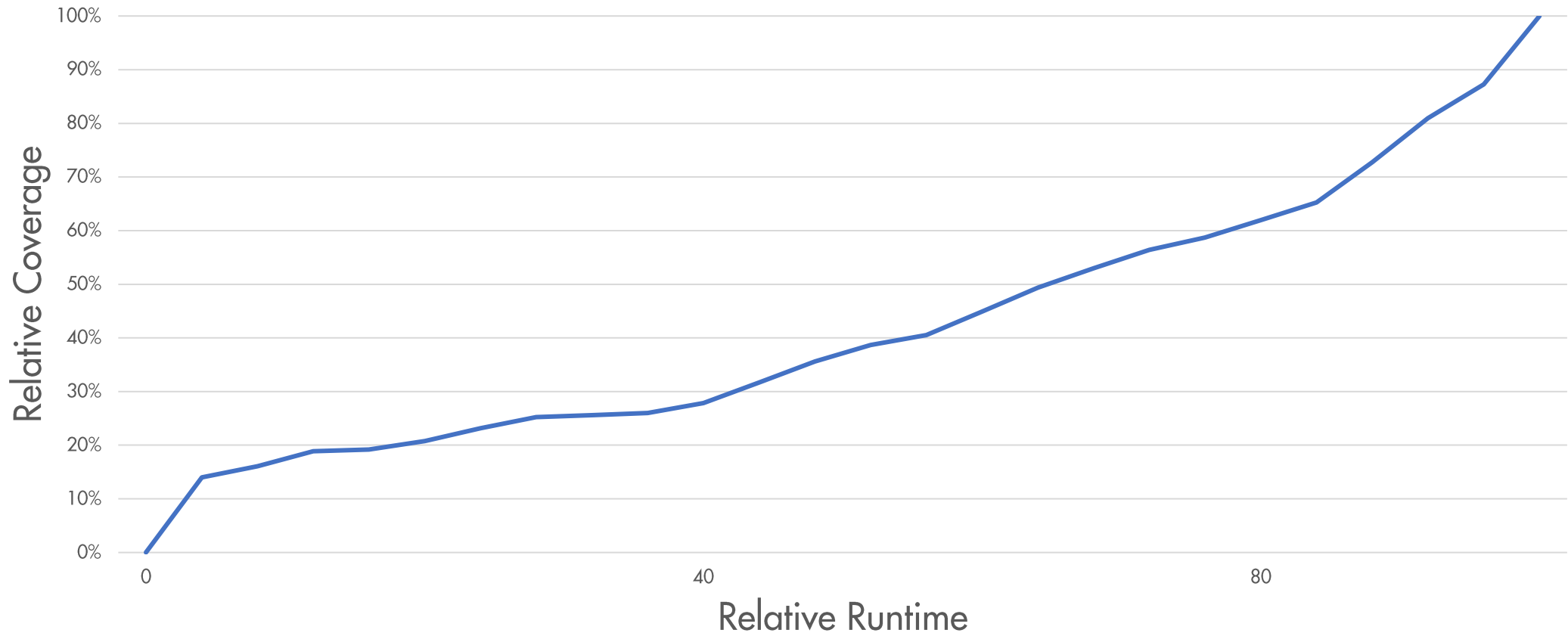


Test Motion Blur

The image consists of a dense, overlapping grid of gray rectangles of various sizes and orientations. Scattered throughout this grid are several smaller rectangles in blue and green. The blue rectangles are more numerous and appear in various sizes and orientations, often forming small clusters or lines. The green rectangles are fewer in number and are also scattered. In the bottom-left corner, there is a white rectangular box with a thin black border containing the text "Test Smart Blur".

Test Smart Blur

Time vs Code Coverage

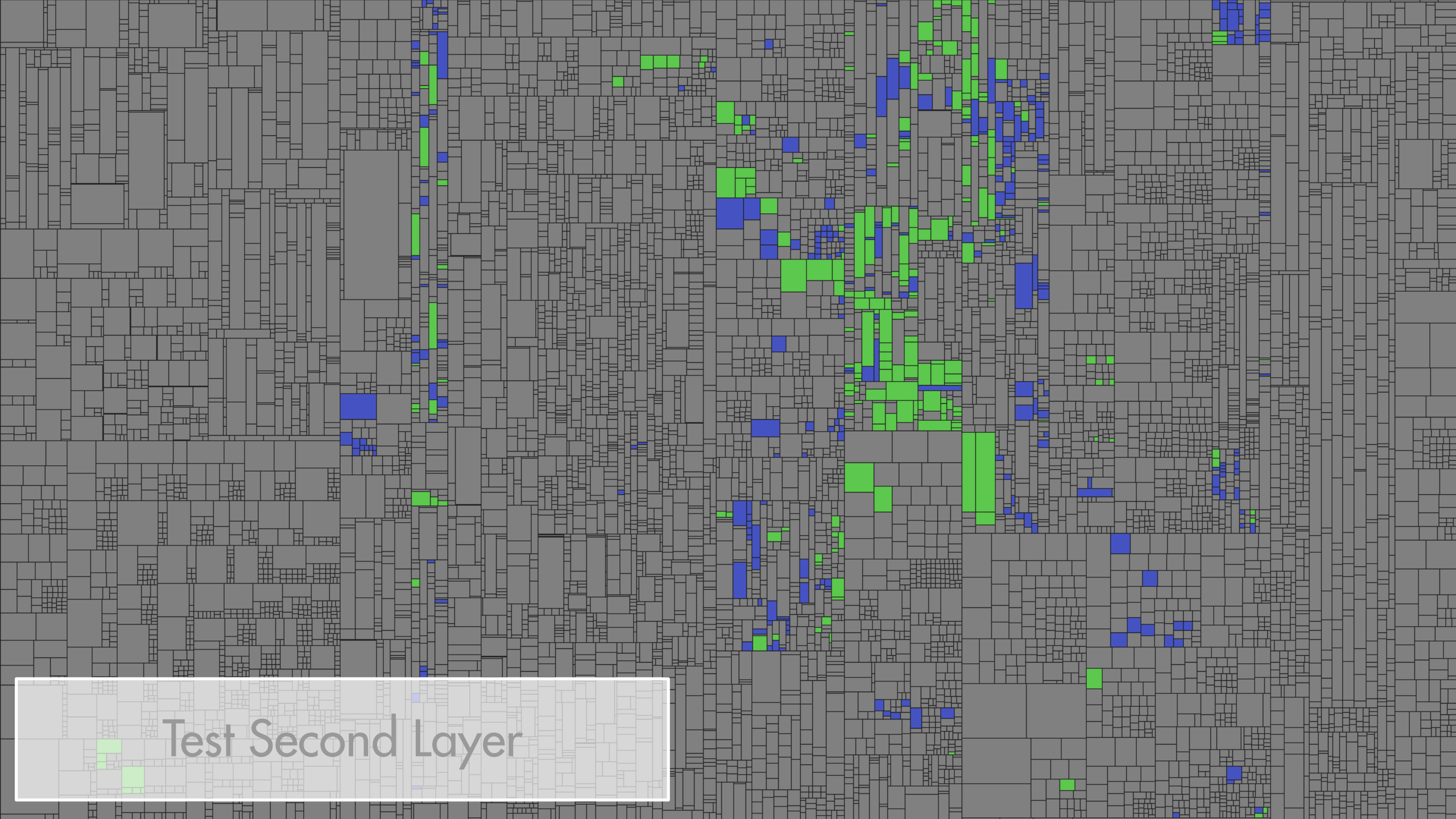




Test Create and Modify
Selection



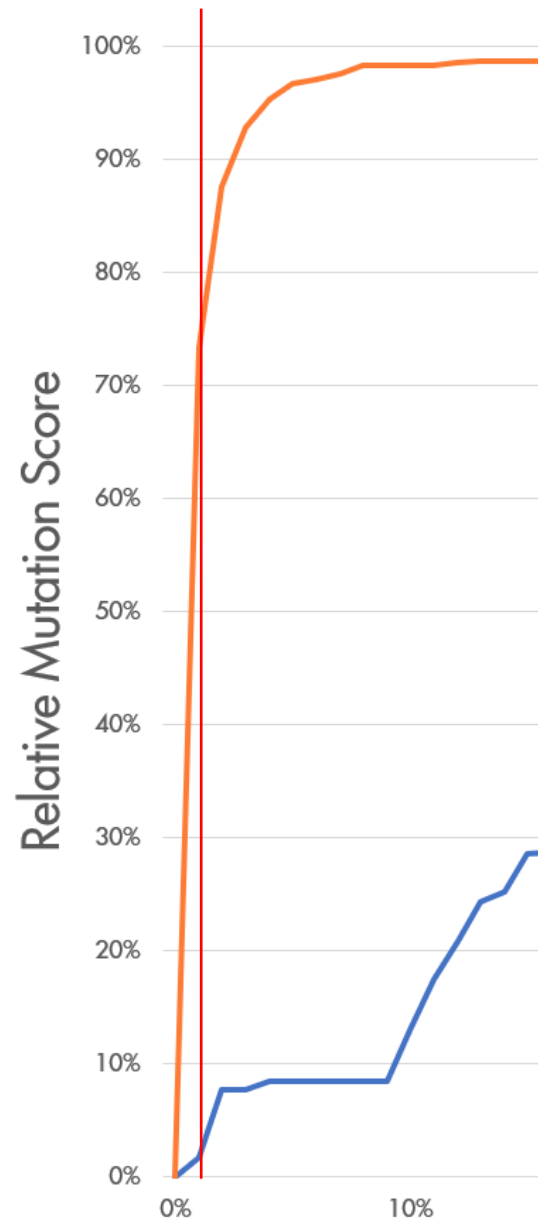
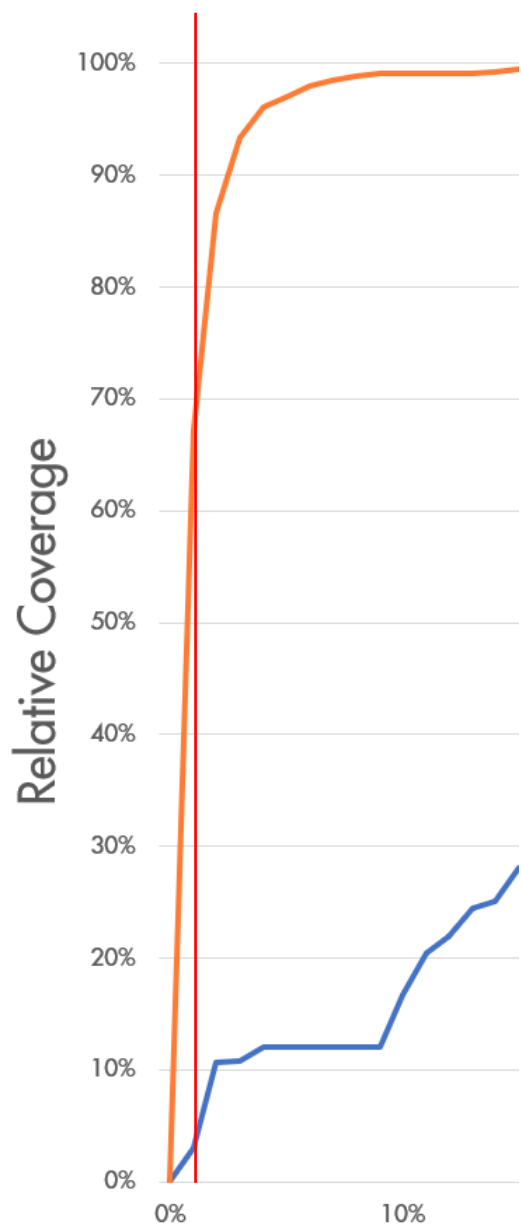
Test Change View Settings



Test Second Layer

The image consists of a dense, overlapping grid of gray rectangles of various sizes and orientations. Scattered throughout this grid are several smaller rectangles in blue and green. These colored rectangles are concentrated in certain areas, such as the upper right and lower right, and are more sparsely distributed in the lower left. The overall effect is a complex, textured pattern of gray with occasional highlights of blue and green.

Test Save Image



Dashboard

Activity

Findings

Metrics

Test Gaps

Files

Components

Issues

Unlinked Changes

Pareto Ranking

Quality Control

Architecture

Delta

Project Configuration

Pareto Ranking

Switch to query language

Show tests from:

Batch TestsNightly

GeVo TestsNightly

KettentestsNightly

Name

Duration

> 0s

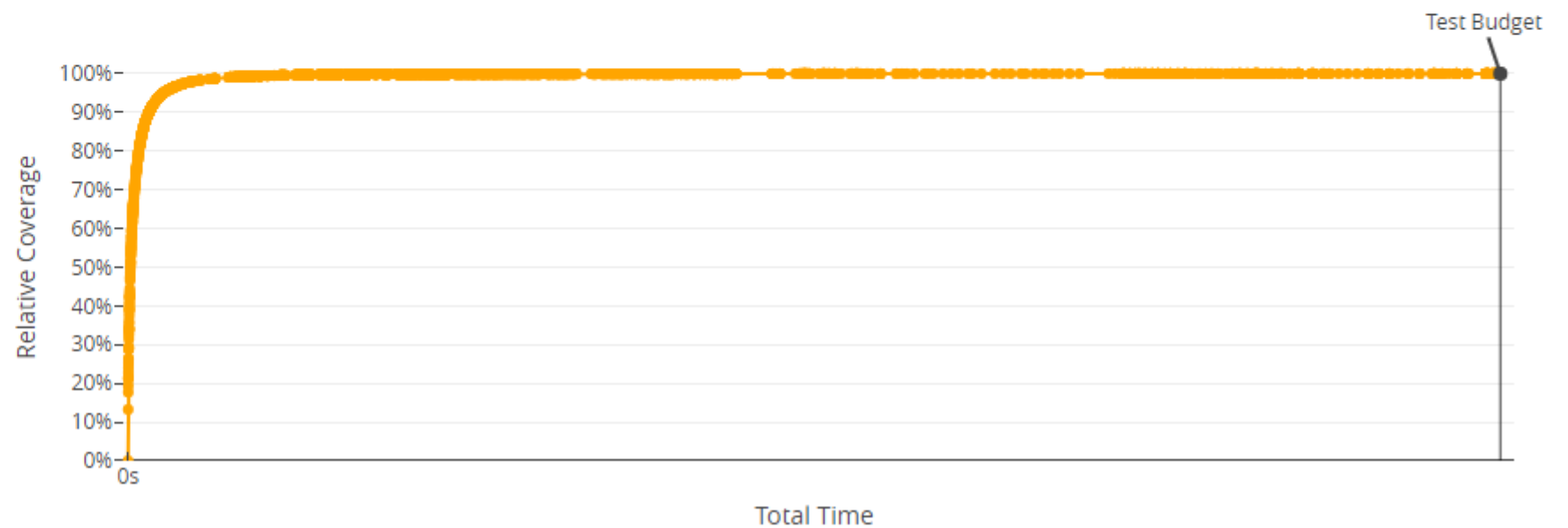
Result

All results

+ Save query

Compute Ranking

Pareto Ranking computes a subset of the selected tests that **maximises test coverage** for the given time budget.



Pareto-Testing

Tests werden **unabhängig von Änderungen** ausgewählt.

95% der Mutanten in 15% der Zeit ermittelt

Einmalige Messung der Coverage reicht aus (ggf. quartärl. Wiederholung)

Weniger Aufwand & breiter Anwendbar

Test-Impact-Analyse

Tests werden für jeden Lauf **passend zu Änderungen** ausgewählt

90% der Mutanten in 2% der Zeit ermittelt

Erfordert kontinuierliche Messung der Coverage und Integration der Test-Auswahl in die CI / Testautomatisierung.

Stärkere Beschleunigung des Feedbacks (bei höherem Aufwand)

Schnelles Feedback trotz langsamer Tests

Test-Impact-Analyse und Pareto-Optimierung
für historisch gewachsene Test-Suites

Mittwoch, 1. Juni 2022

10:30 bis 12:00 Uhr

Zur Anmeldung:

cqse.eu/workshop-8020-de-2206-gtd



Dr. Elmar Jürgens



Fabian Streitl

Kontakt – Ich freue mich auf Fragen 😊



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The logo for CQSE, featuring the letters 'CQSE' in a bold, sans-serif font. The 'Q' is colored orange, while the 'C', 'S', and 'E' are in grey.