Software
QS-TAG
SW-Quality & Testing

imbus presents

Software-QS-Tag

2026



powered by **imbus**

Software
QS-TAG
SW-Quality & Testing

Heilfasten für die Test-Suite

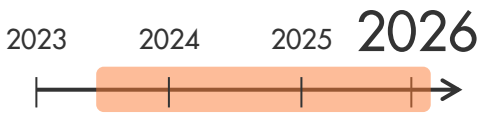
Mit wenig Aufwand Test-Laufzeit und Wartungskosten sparen

Stefan Brand



Teamscale

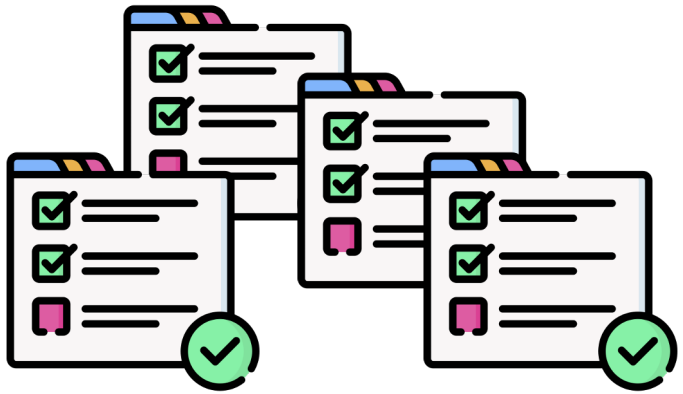
by CQSE





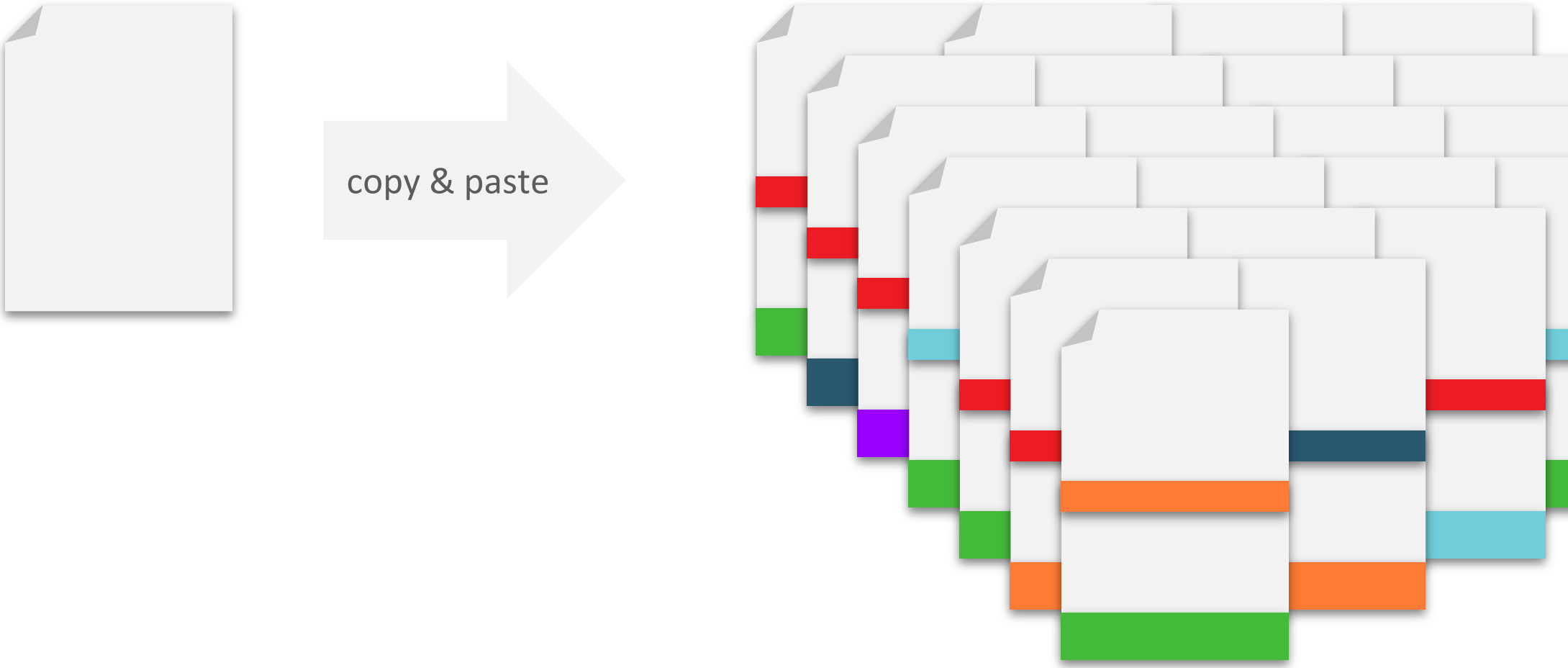
Test-Suite-Minimierung

Test ≠ Test





Redundanz


copy & paste

copenhagen.jpg (1920x2400) - Pixelitor 4.3.2

File Edit Layer Select Image Color Filter View Help

Brush: Hard Settings... Radius: 10 Mirror: None Opacity: 100 %, Blending Mode: Normal Lazy Mouse...

copenhagen.jpg



Layers

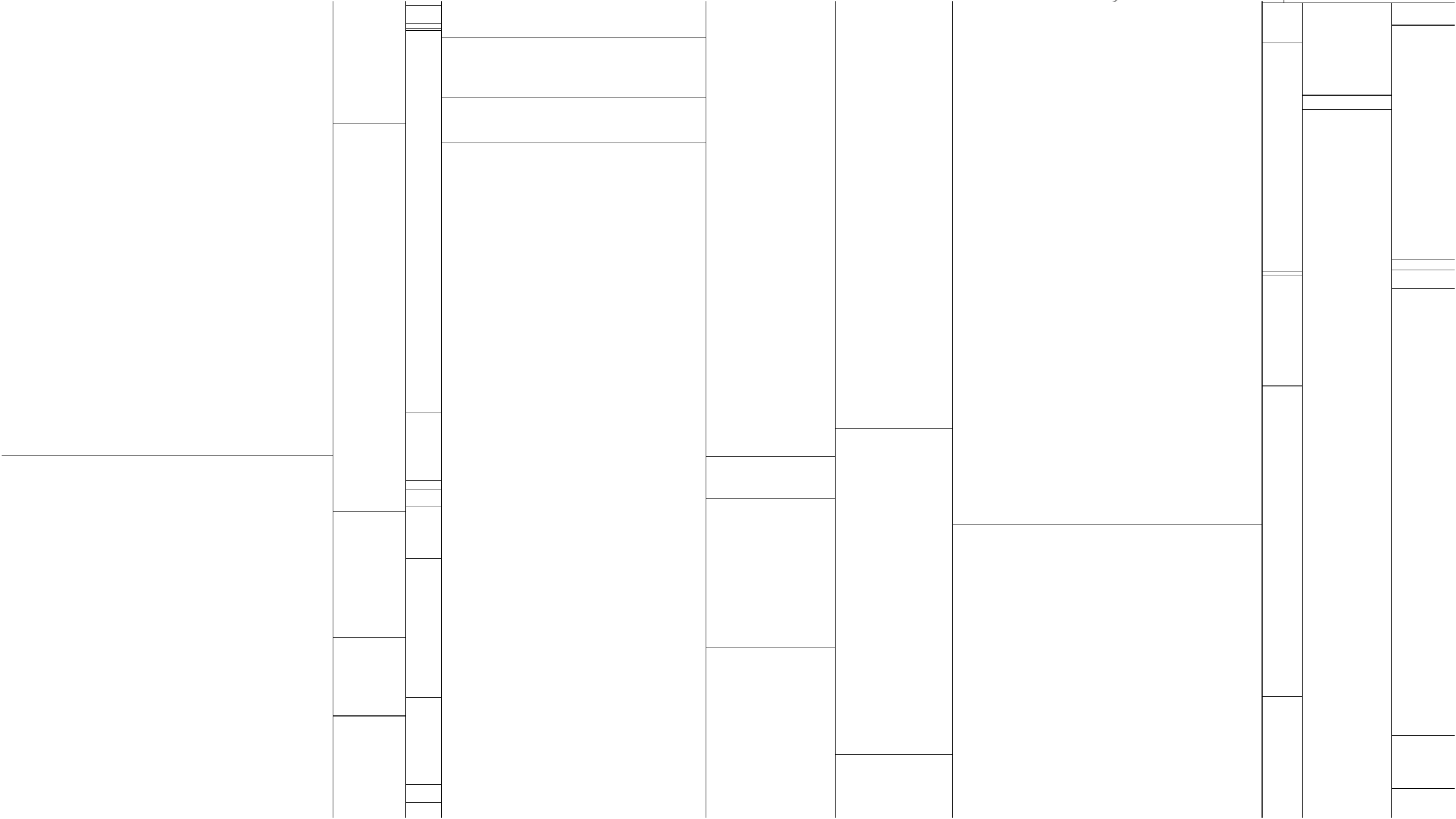
Opacity: 100 % Normal

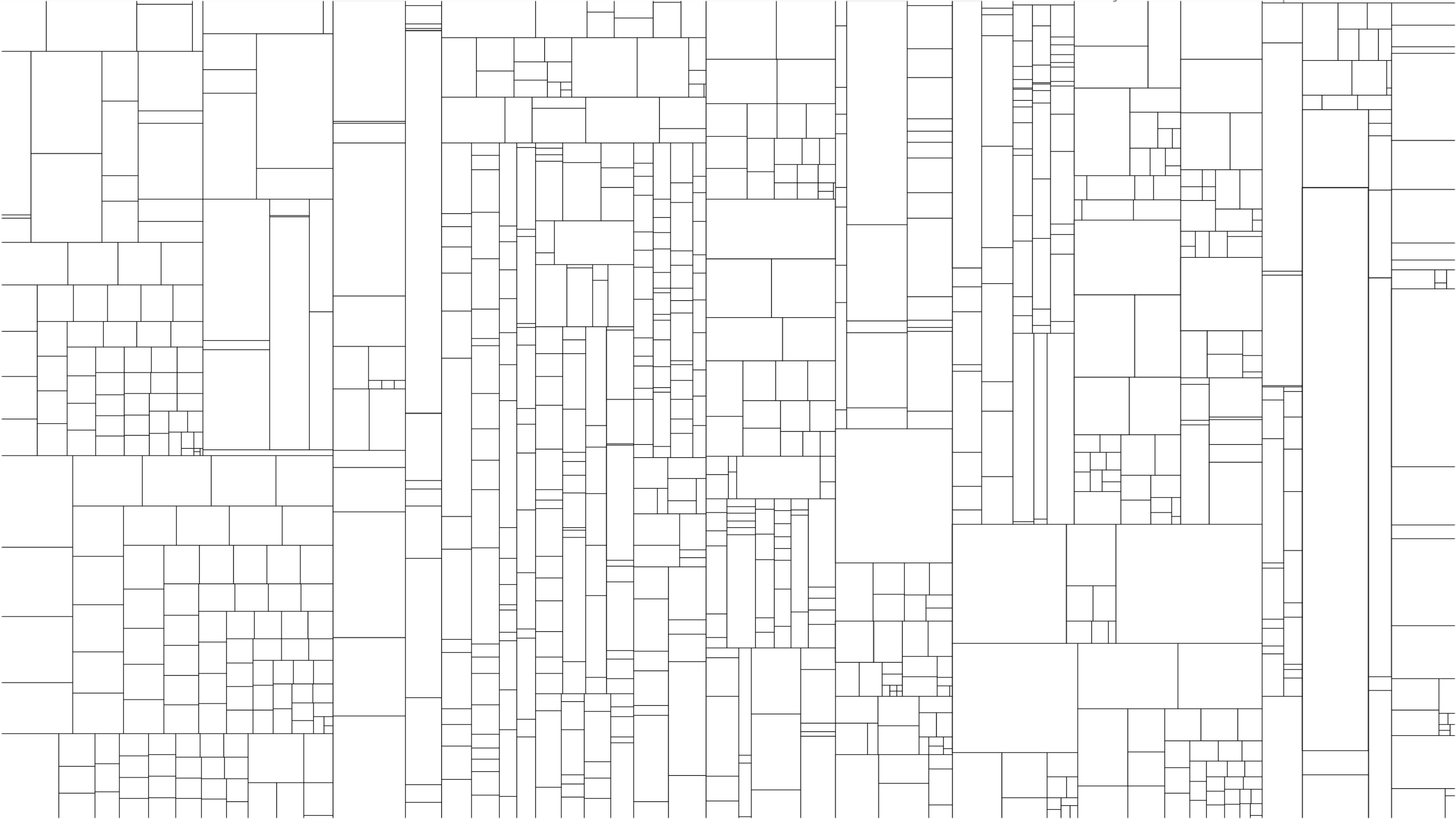
layer 1

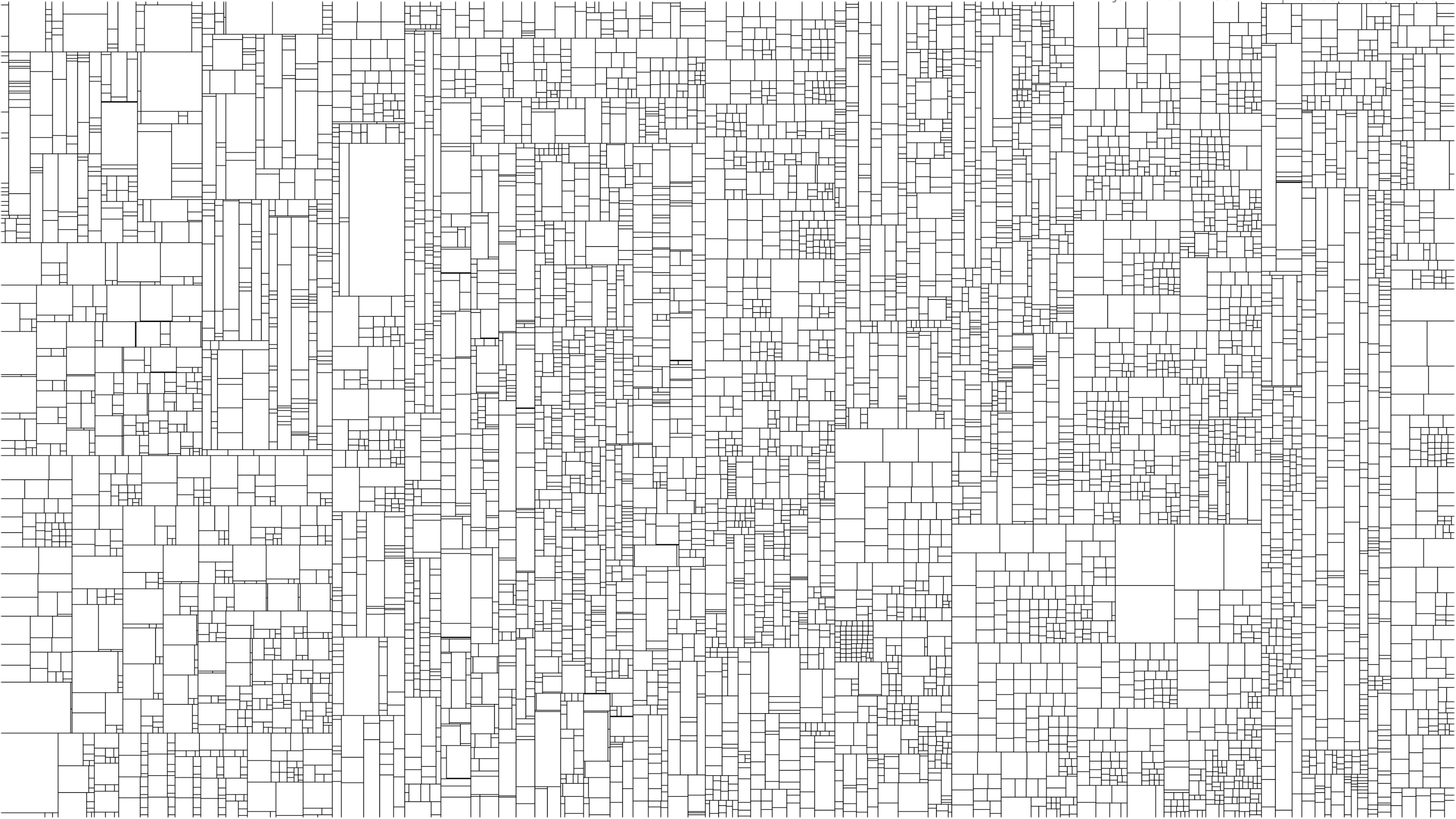
copenhagen.jpg (1920x2400) was opened.

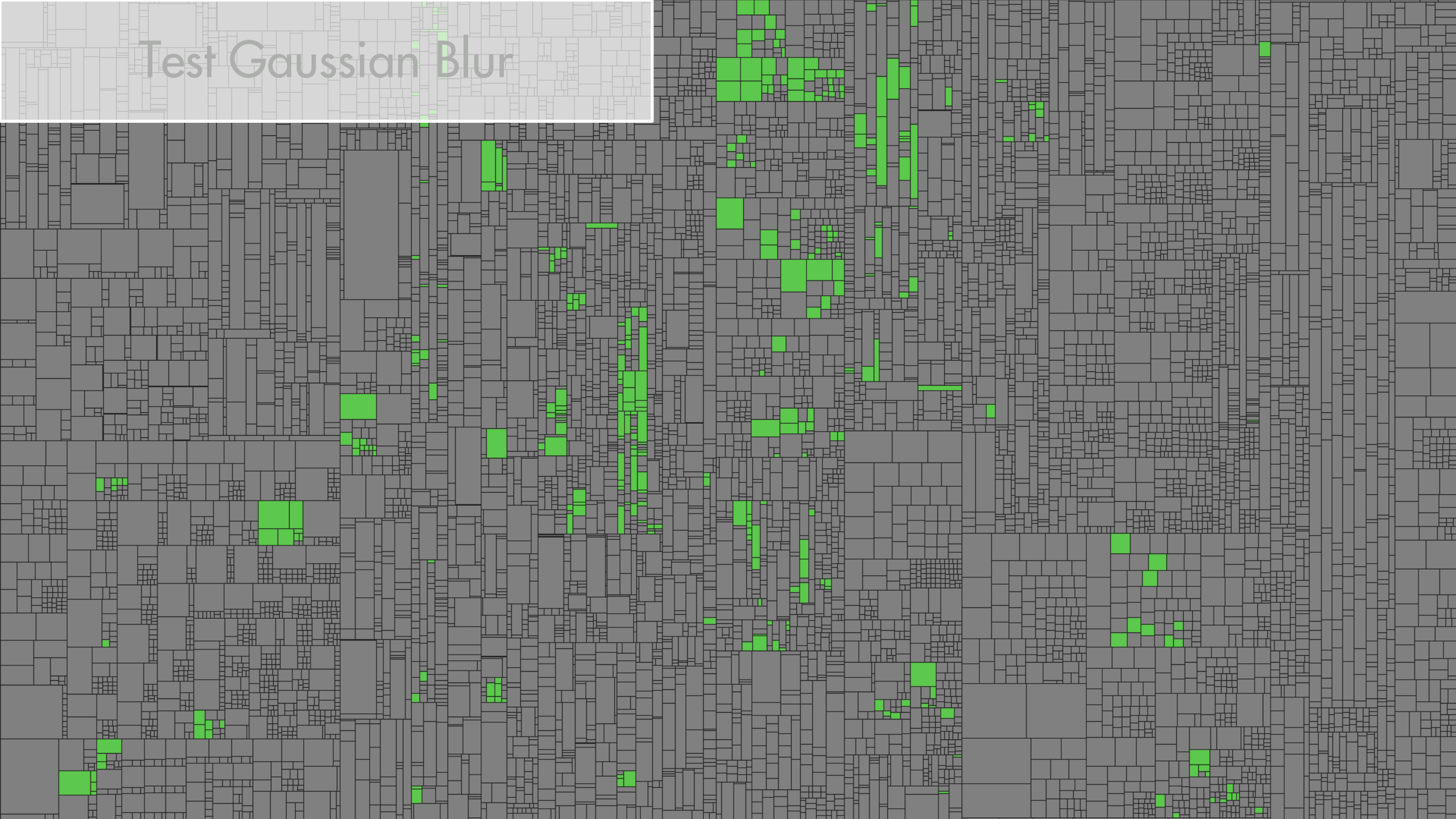
Zoom: 42.04% Fit 100%

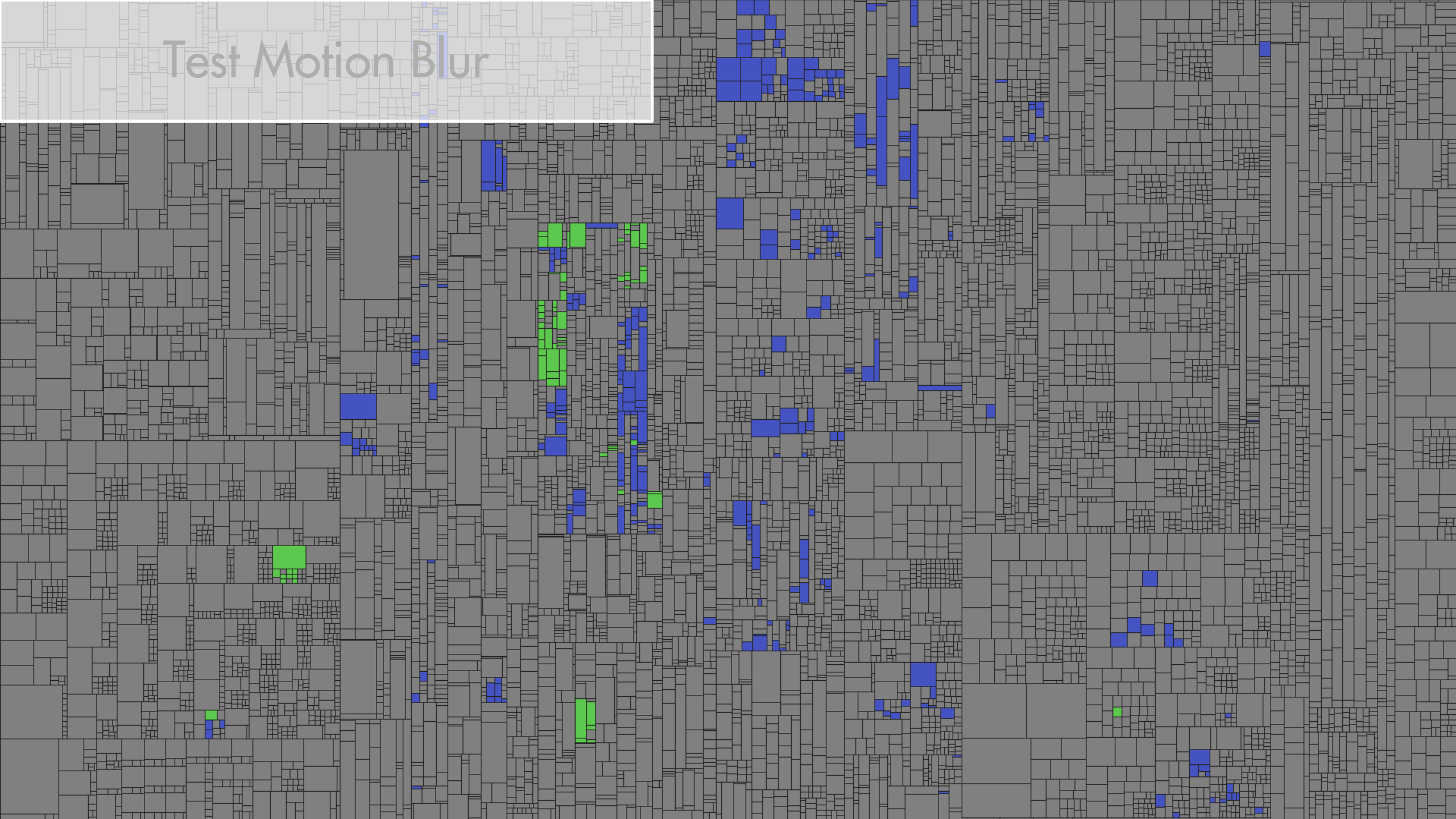
Photo in Pixelitor by Elton Sa on Unsplash

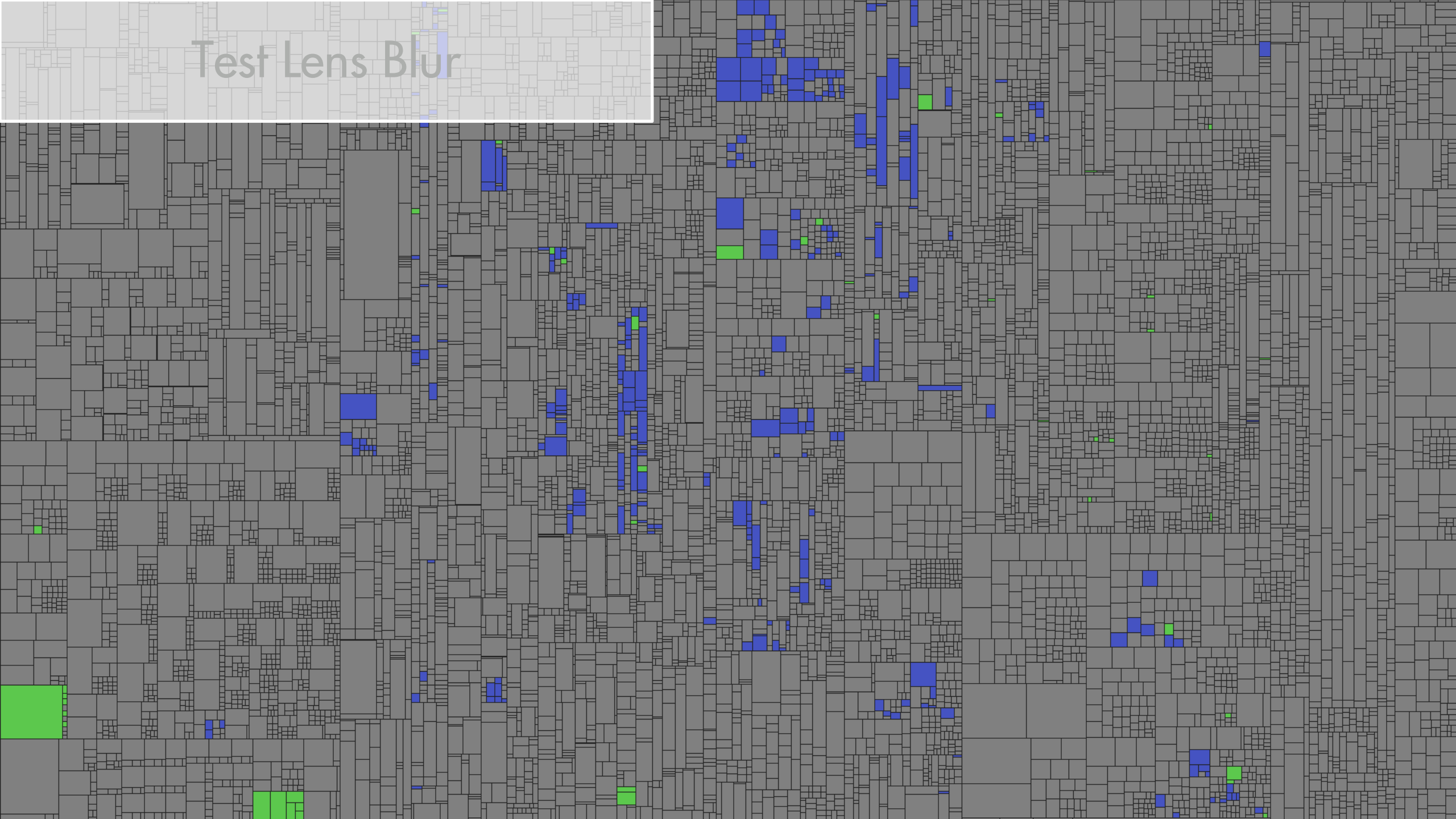


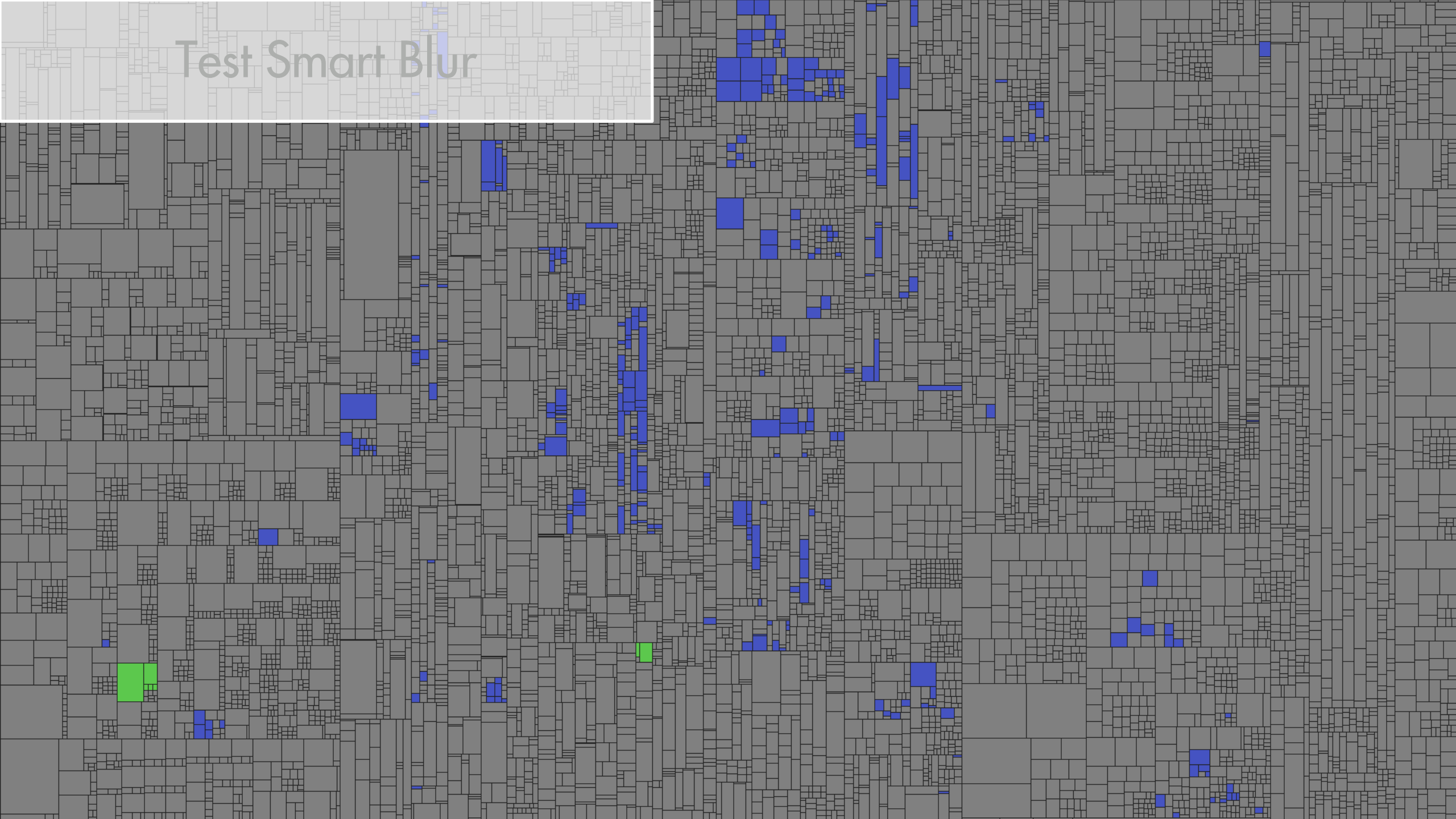


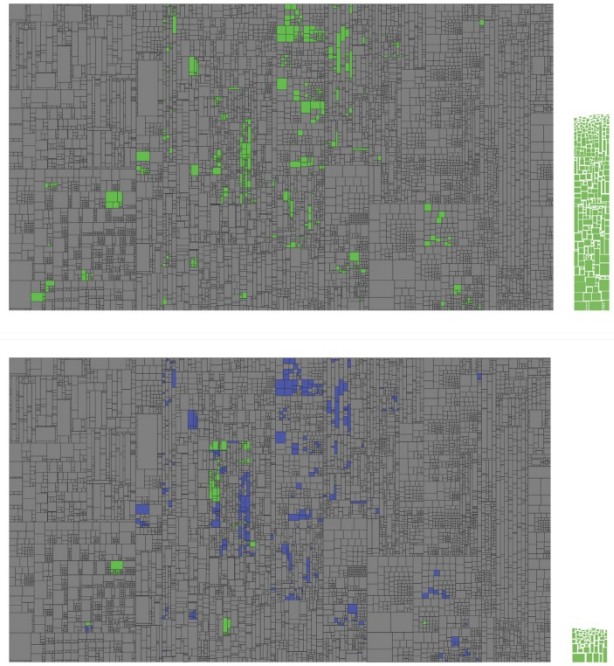



Test Gaussian Blur

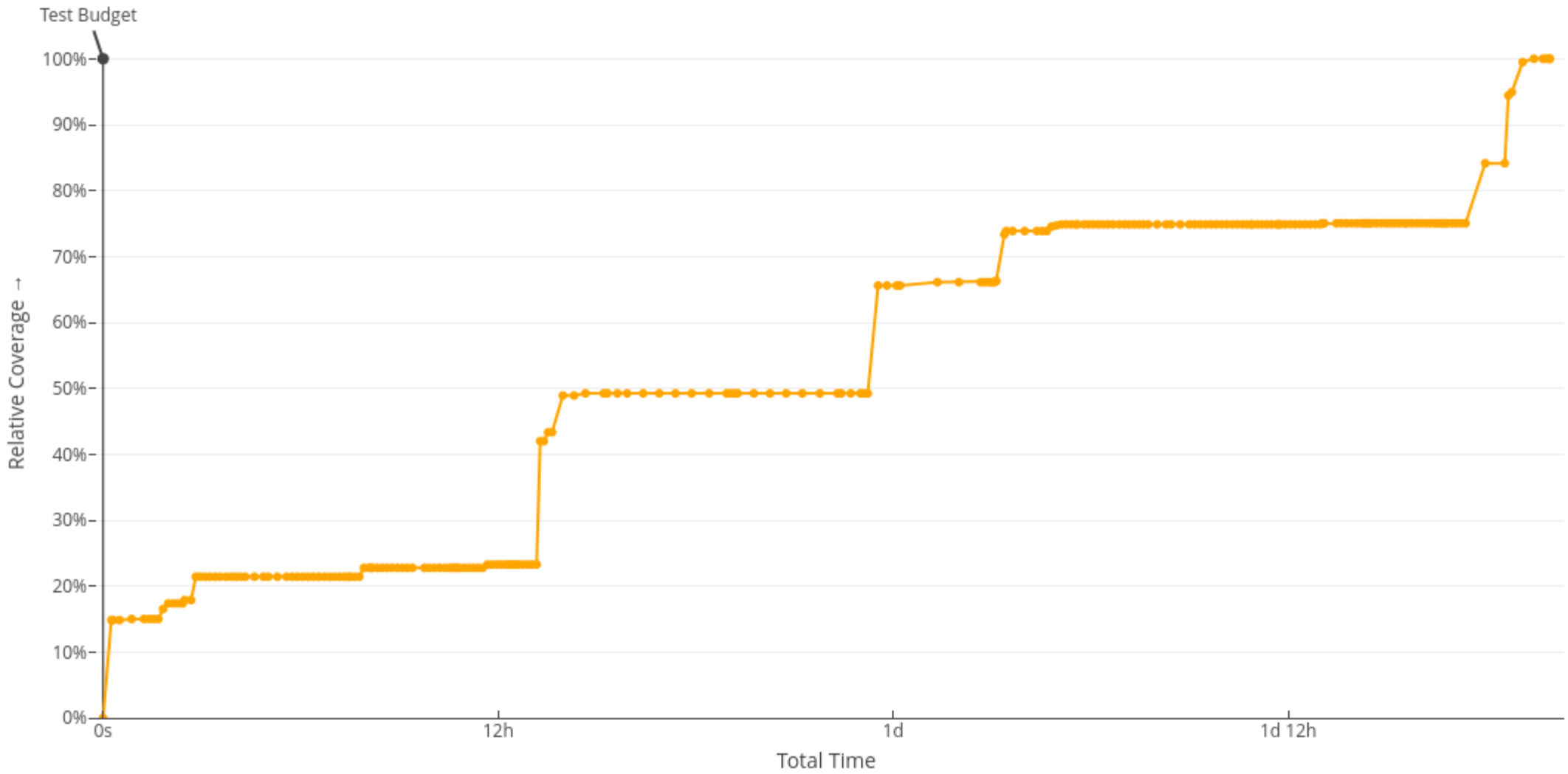

Test Motion Blur


Test Lens Blur


Test Smart Blur



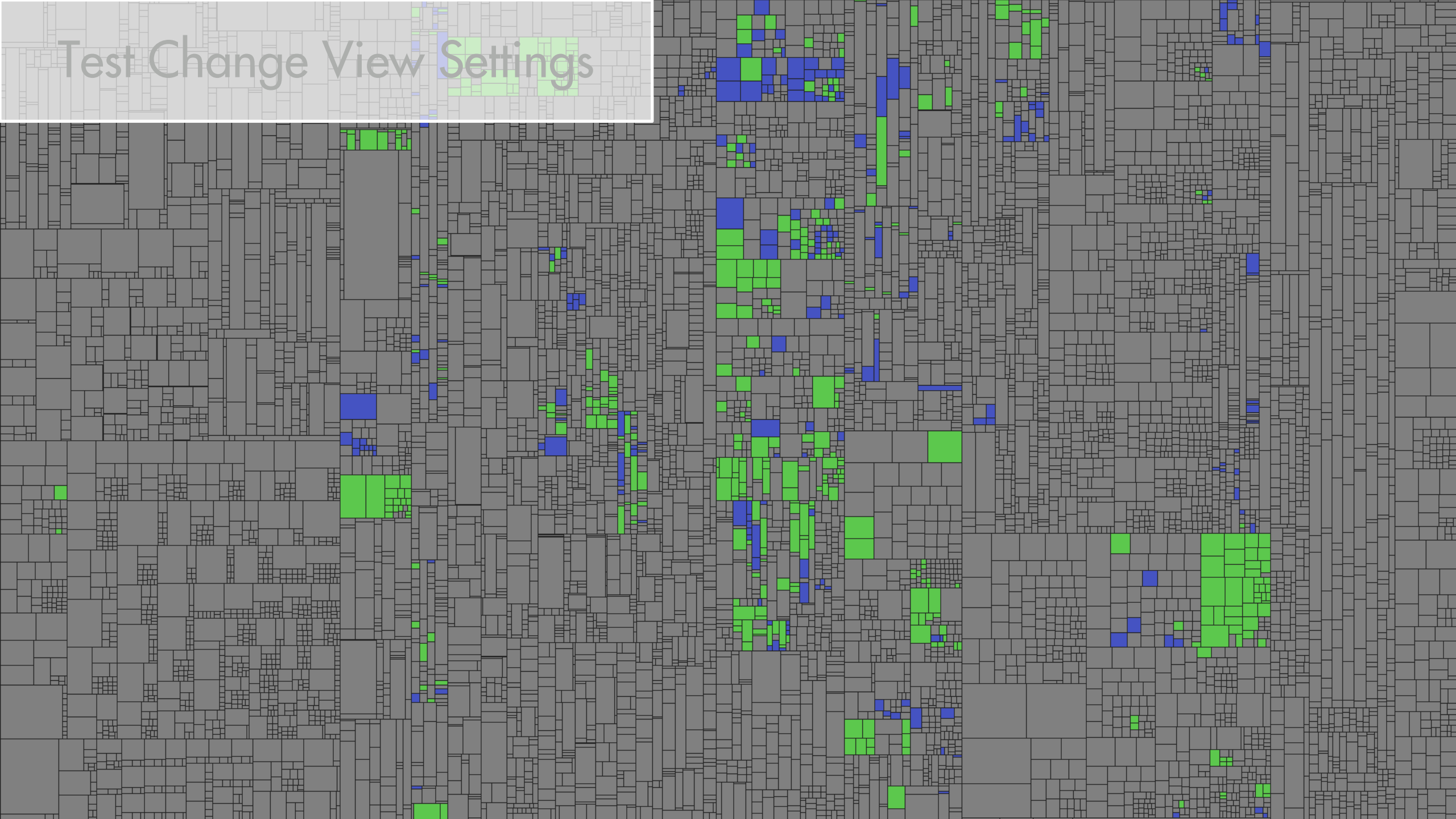
Coverage over Time

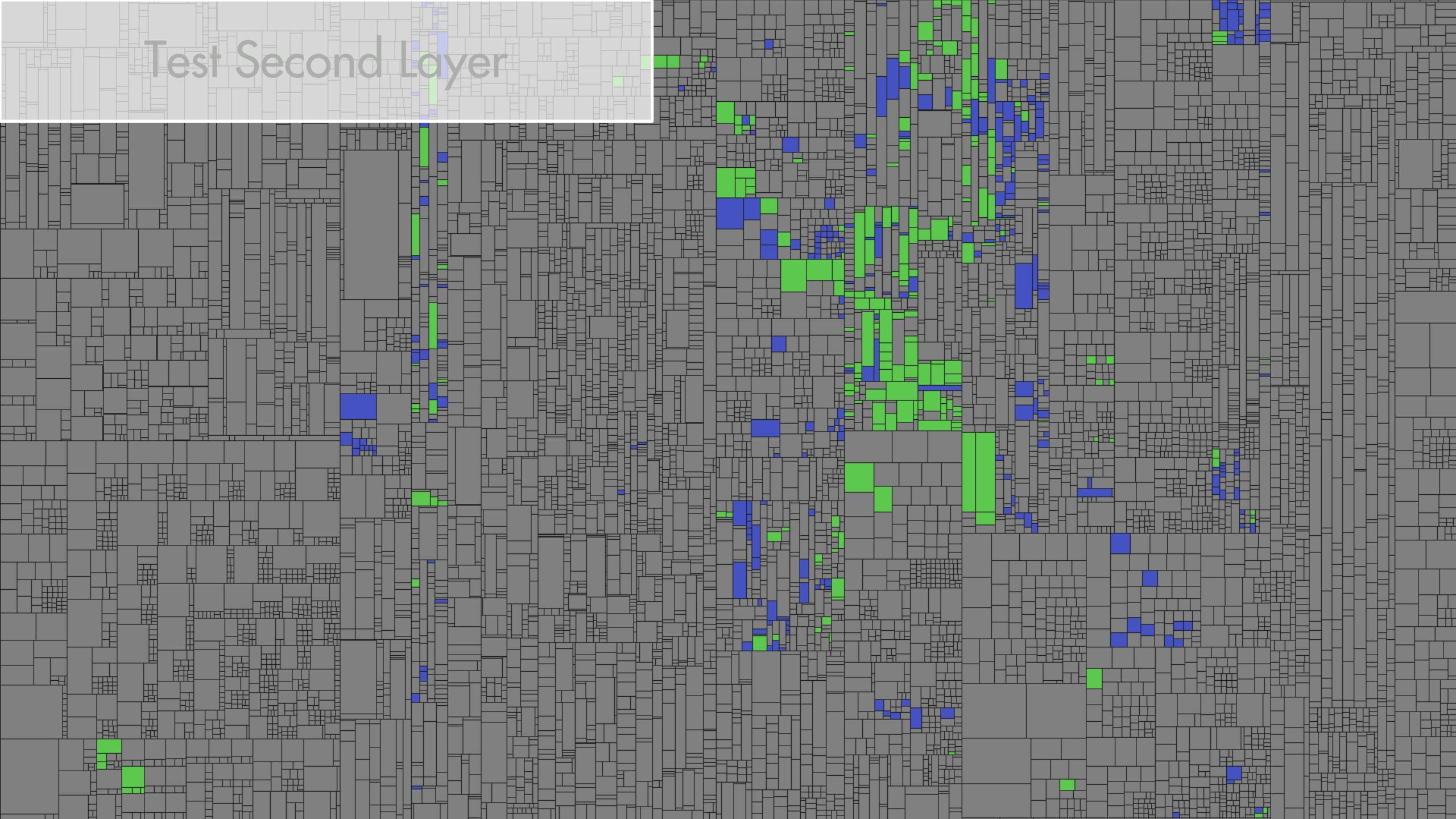


Results for Test Query & Budget Restriction

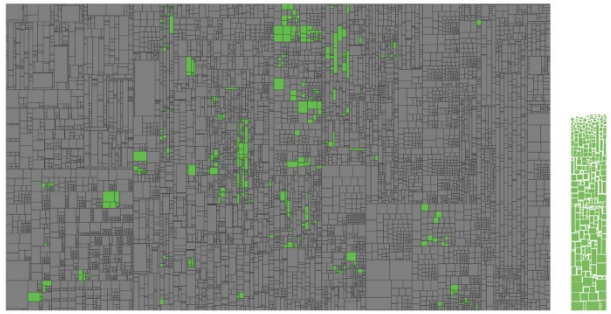
Relative Coverage: 0%, Selected Tests: 0 out of 236 (0%)

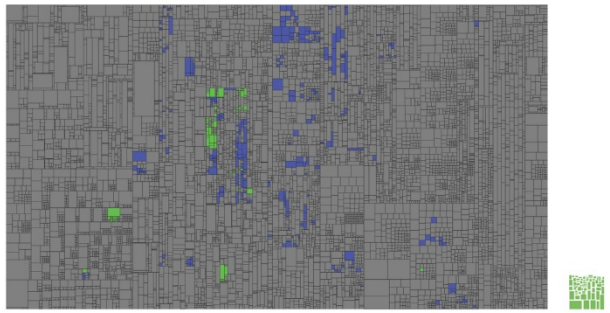

Test Create and Modify Selection

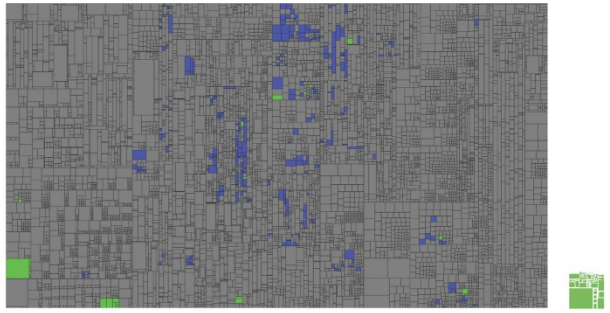

Test Change View Settings

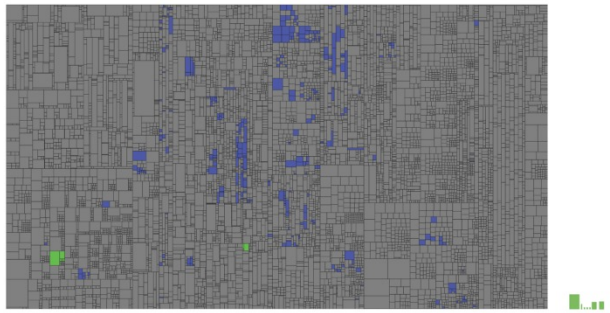

Test Second Layer

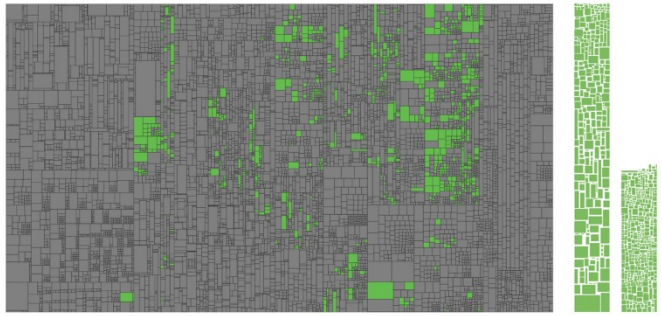

Test Save Image

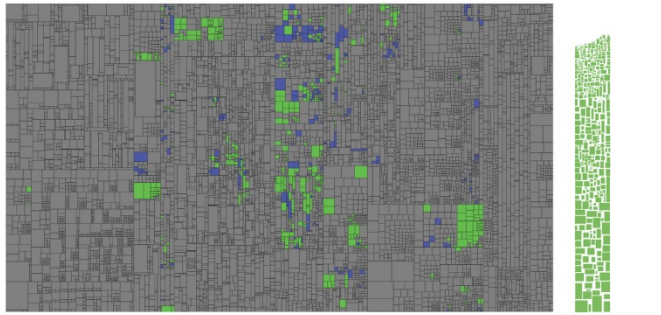


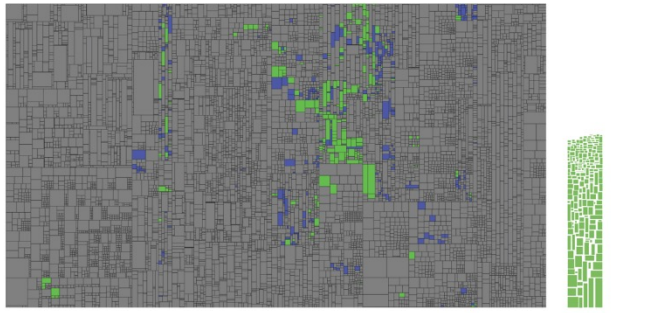


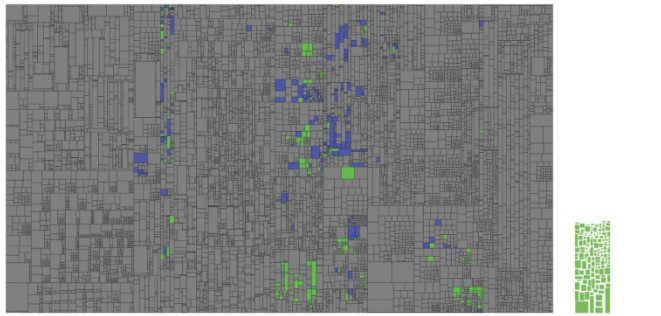




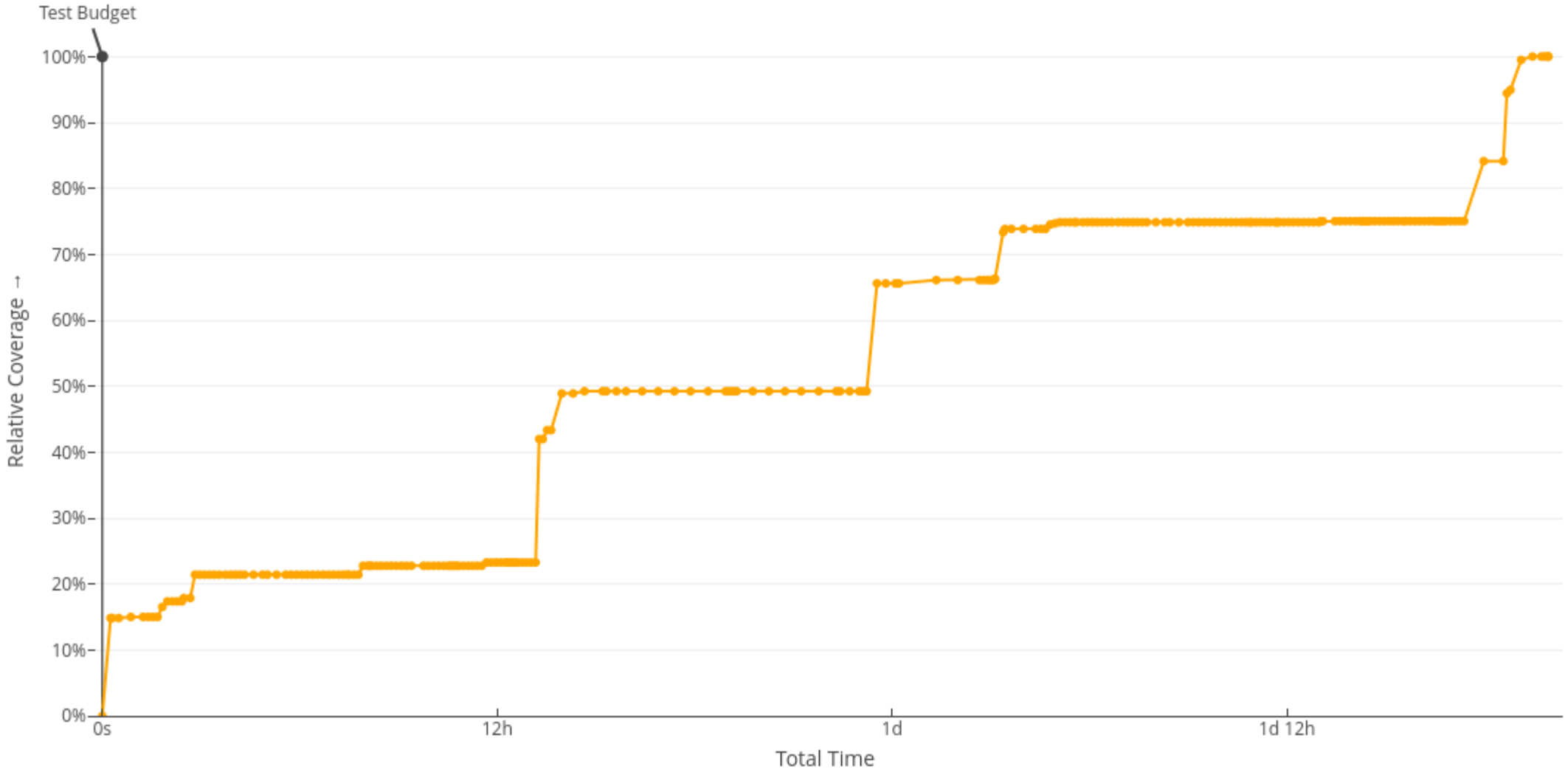








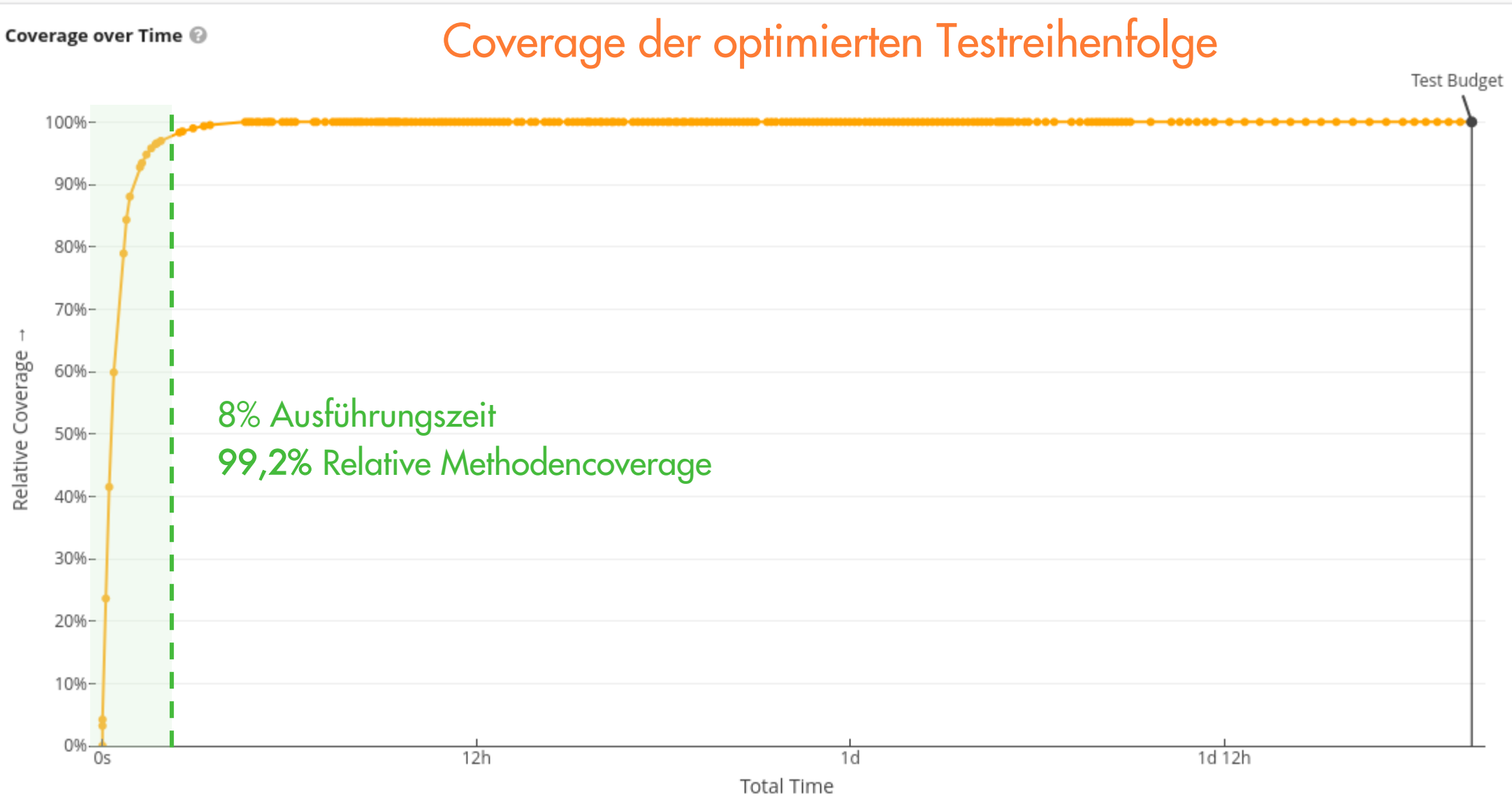
Coverage over Time



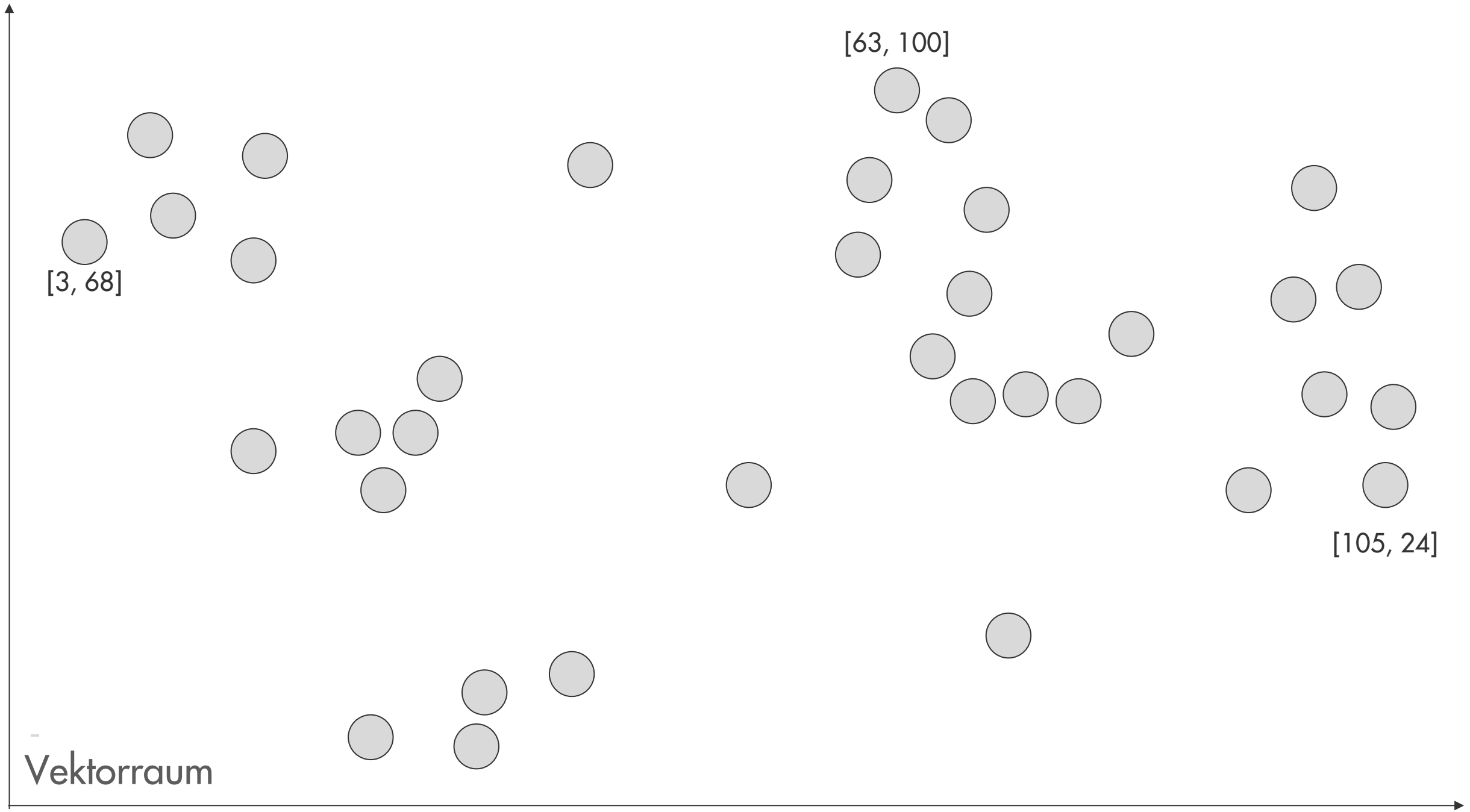
Results for Test Query & Budget Restriction

Relative Coverage: 0%, Selected Tests: 0 out of 236 (0%)

Coverage der optimierten Testreihenfolge



Wie können wir diese Tests
einfach identifizieren?

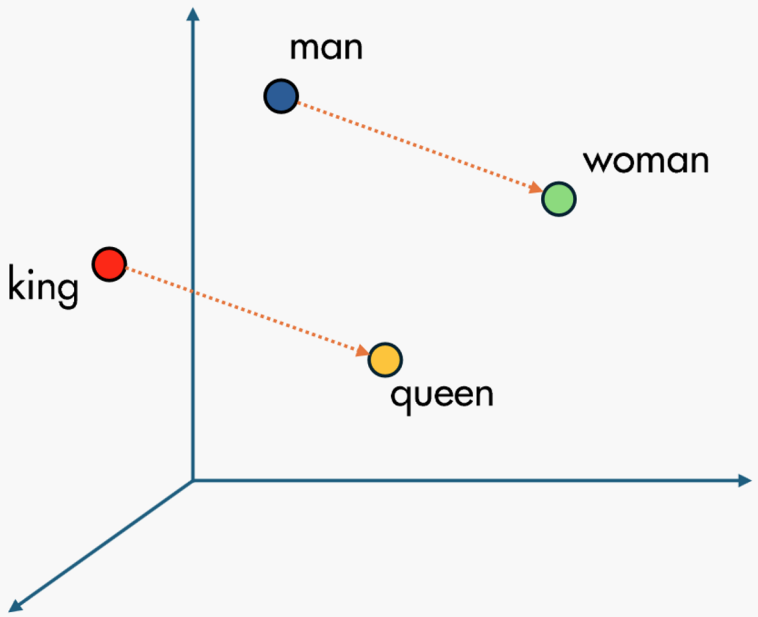

[63, 100]
[3, 68]
[105, 24]
Vektorraum

Large Language ("AI") Modelle

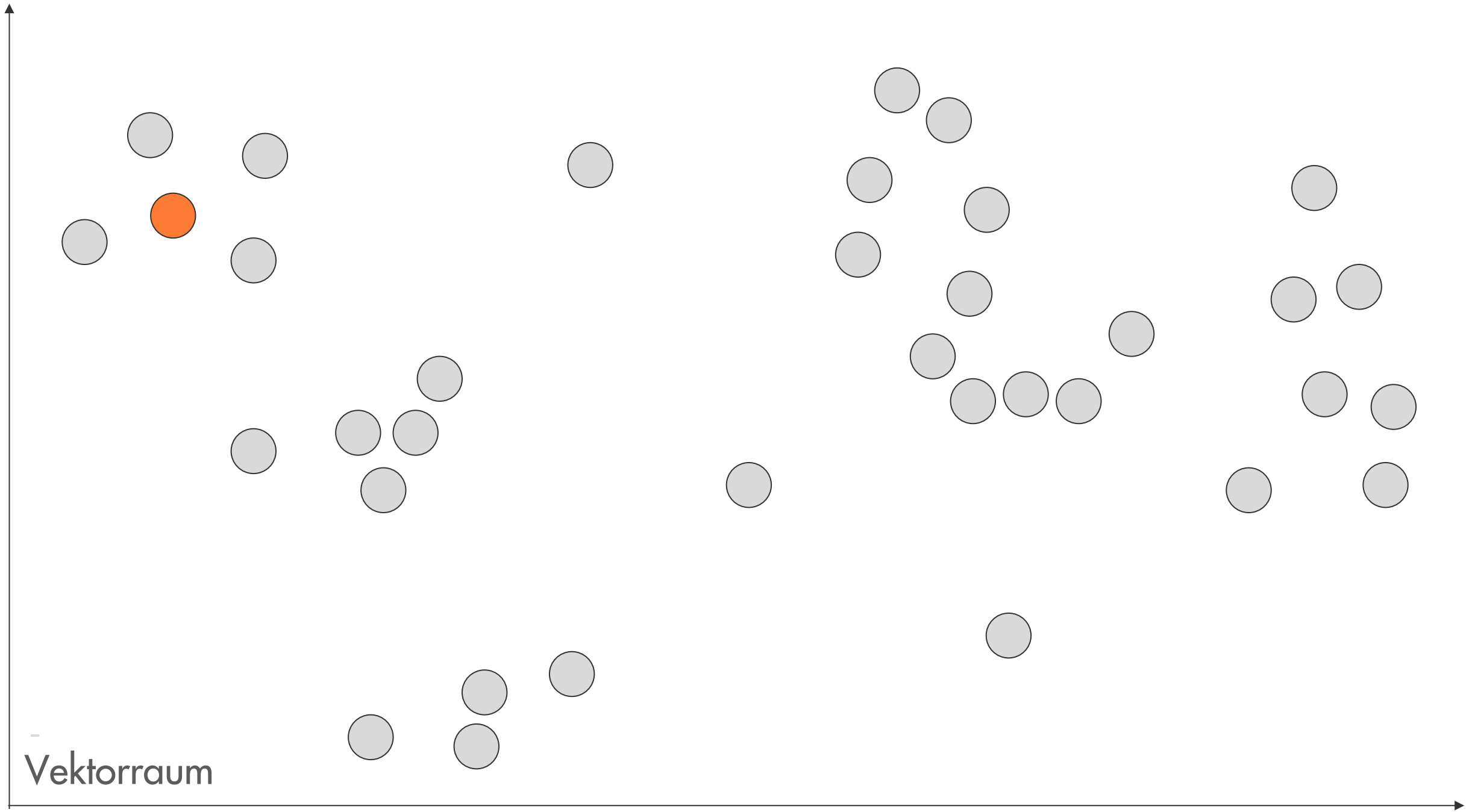
	living being	feline	human	gender	royal	verb	plural
man	-0.05	-0.31	0.18	-0.28	-0.24	0.11	-0.16
woman	-0.14	-0.20	0.30	-0.48	-0.04	0.14	-0.04
king	0.11	-0.12	0.10	-0.38	-0.06	0.08	-0.14
queen	-0.01	-0.31	0.23	-0.43	-0.17	0.10	0.04

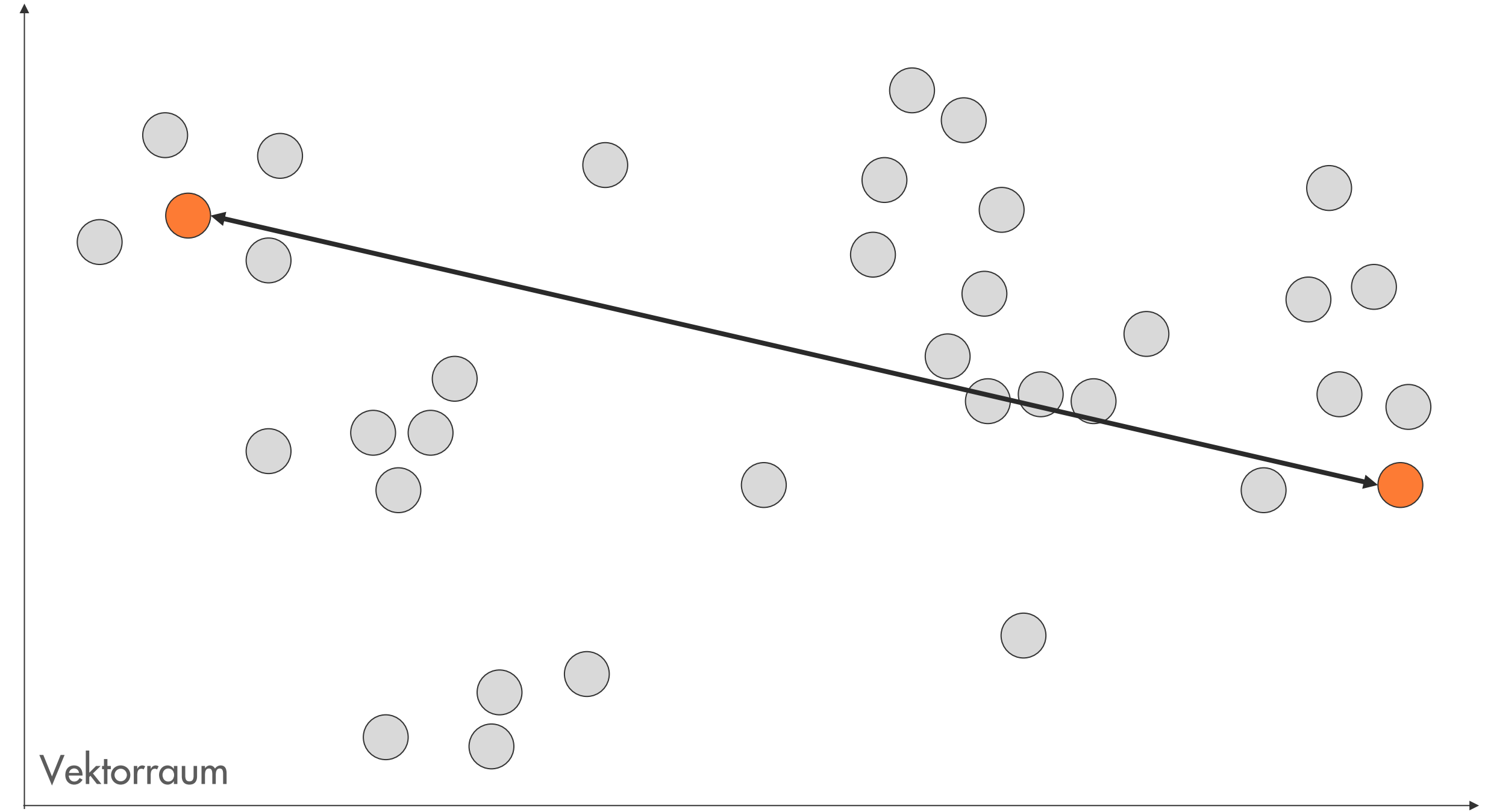
Word

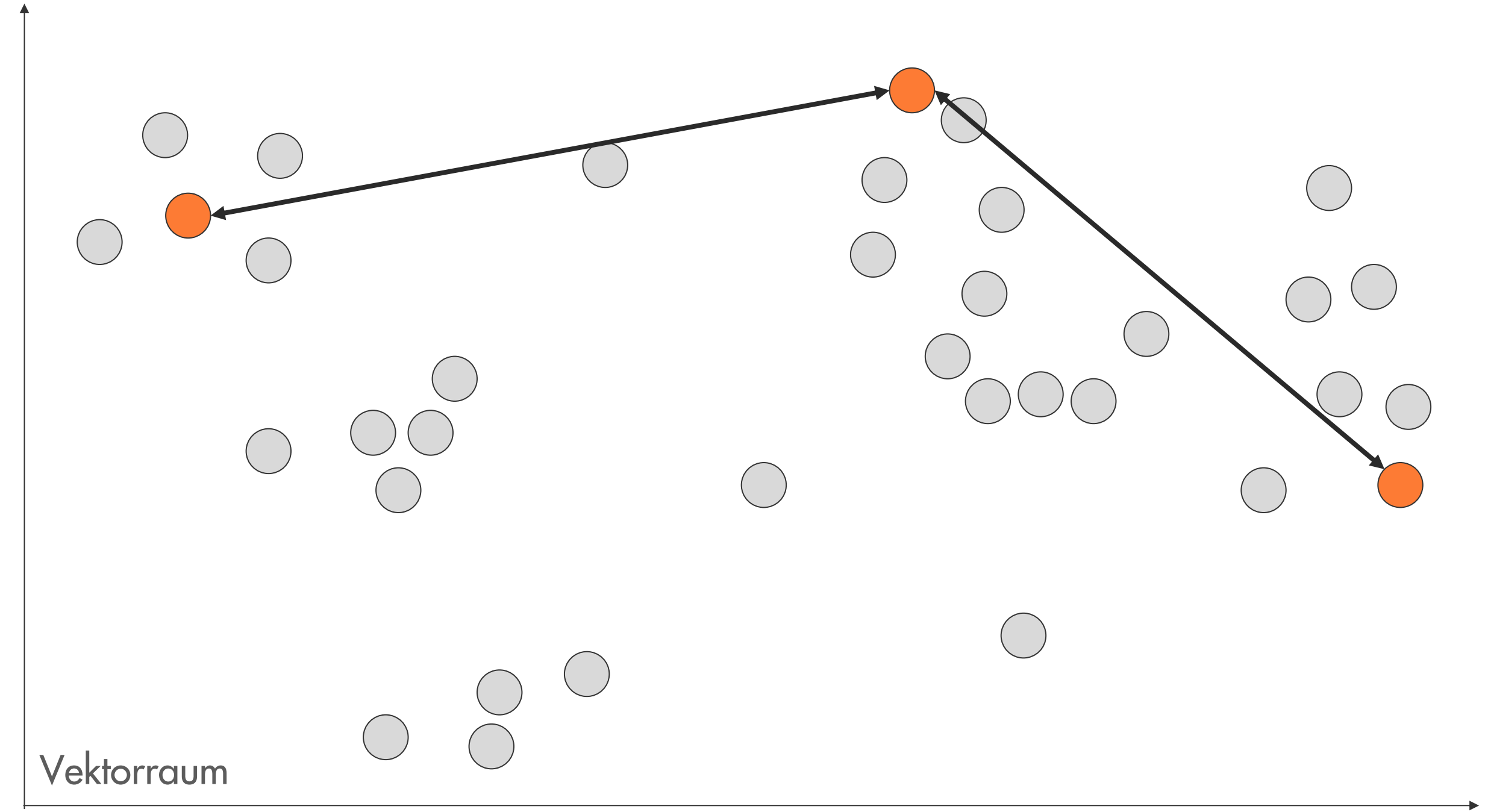
Embedding

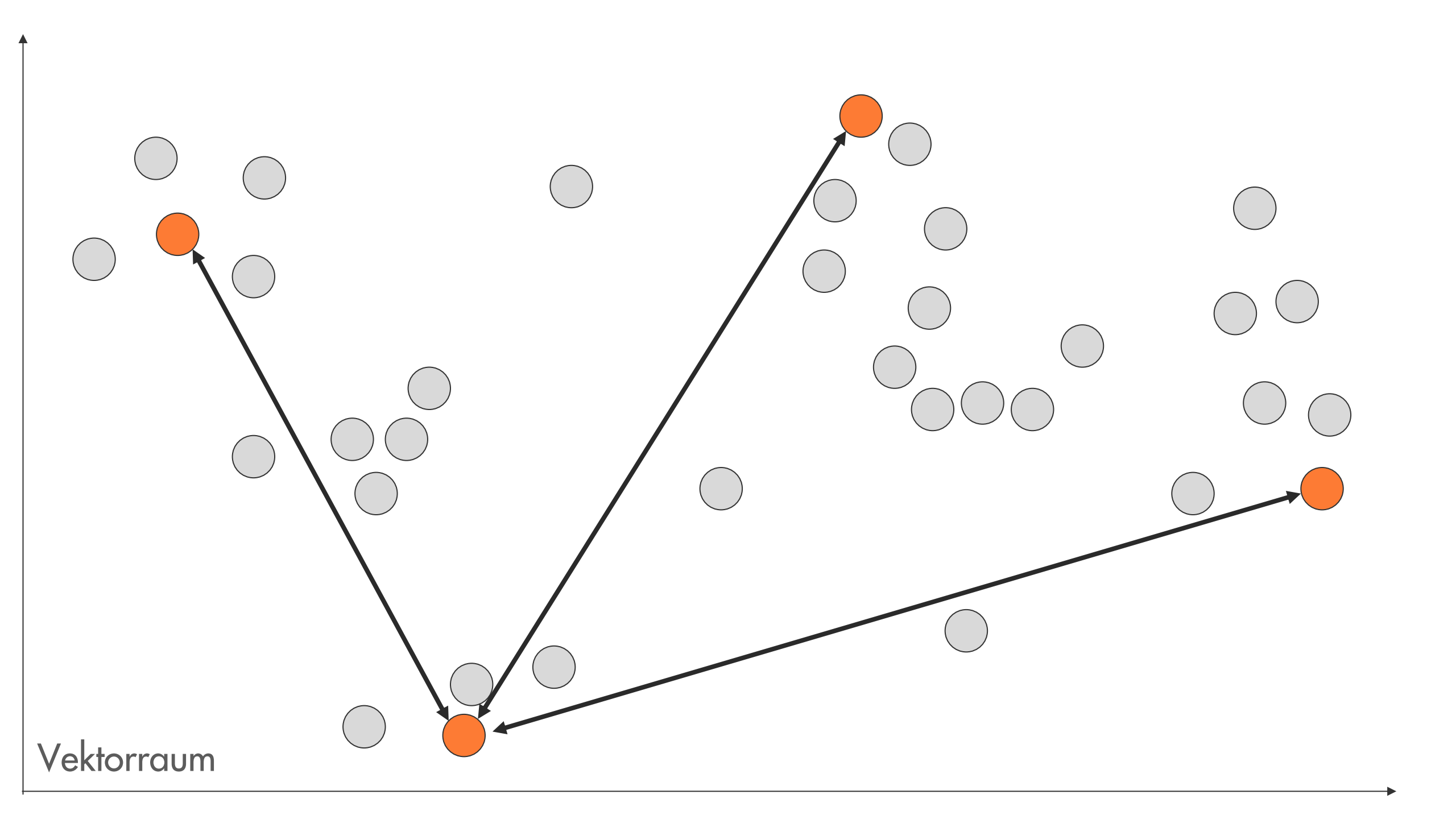


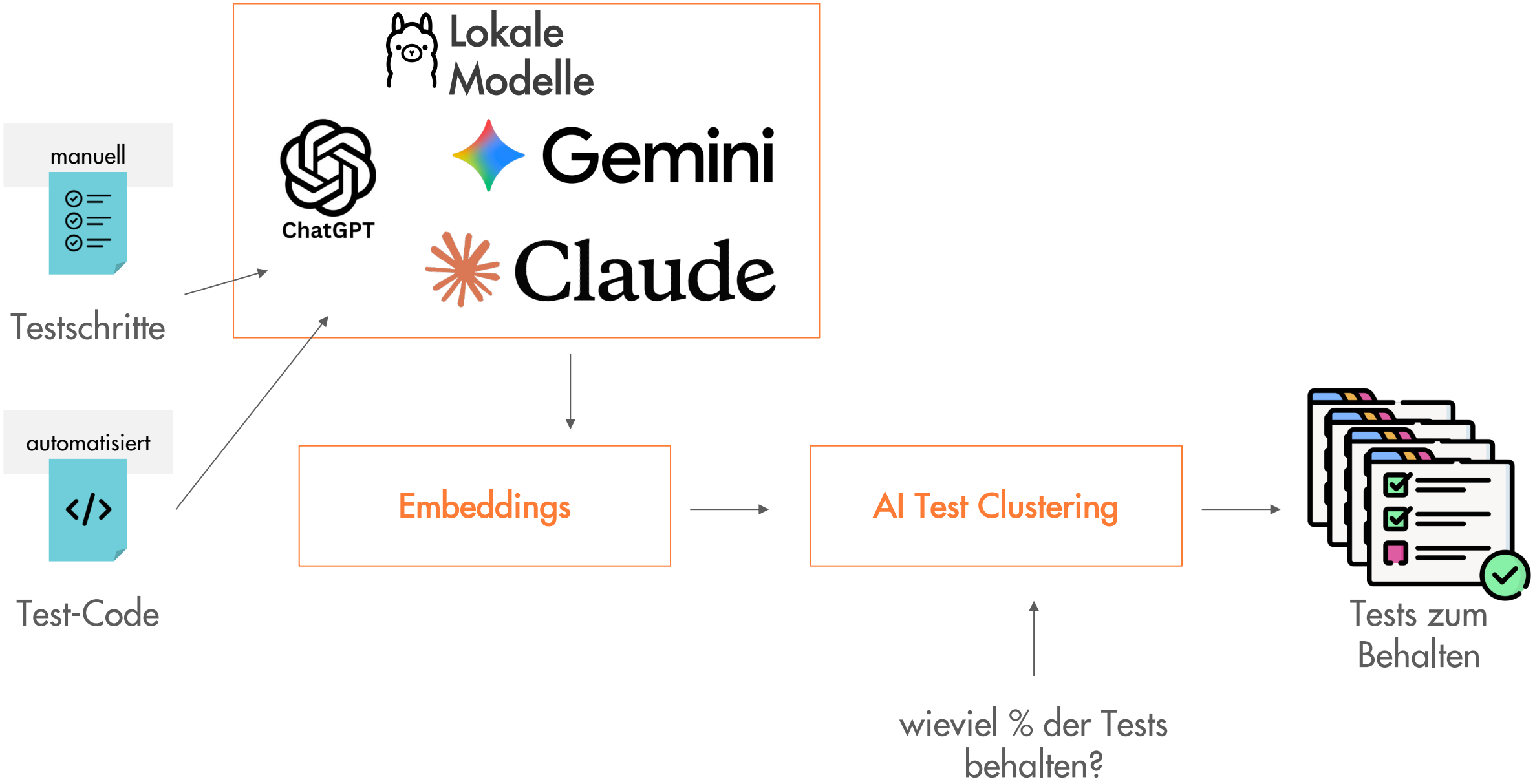
Visualization


Vektorraum


Vektorraum

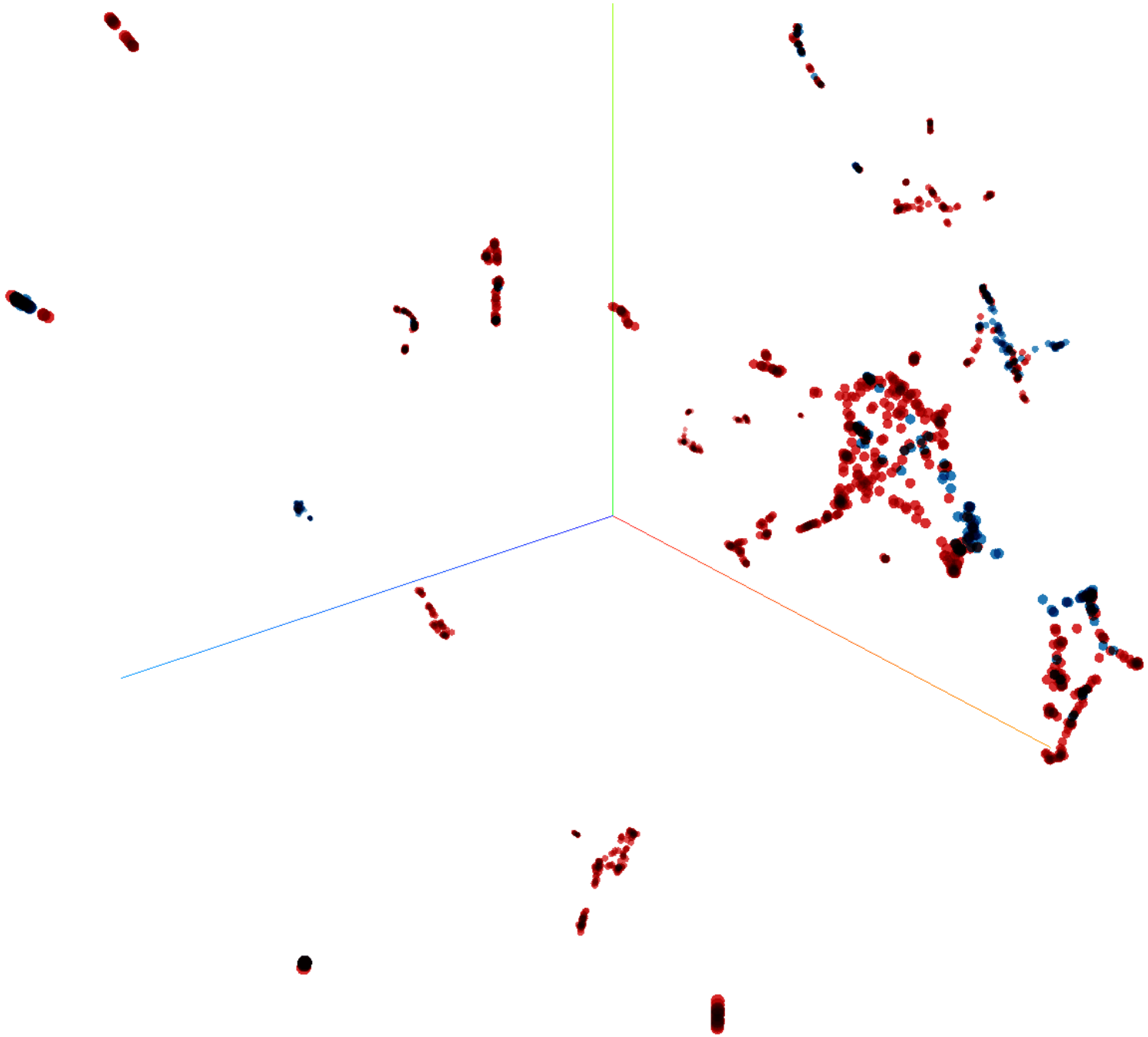

Vektorraum


Vektorraum

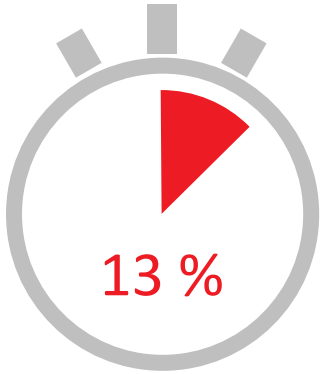

Lokale Modelle
ChatGPT
Gemini
Claude
manuell
Testschritte
automatisiert
Test-Code
Embeddings
AI Test Clustering
wieviel % der Tests behalten?
Tests zum Behalten

1700 Tests

20% Selektion



AI Test Clustering

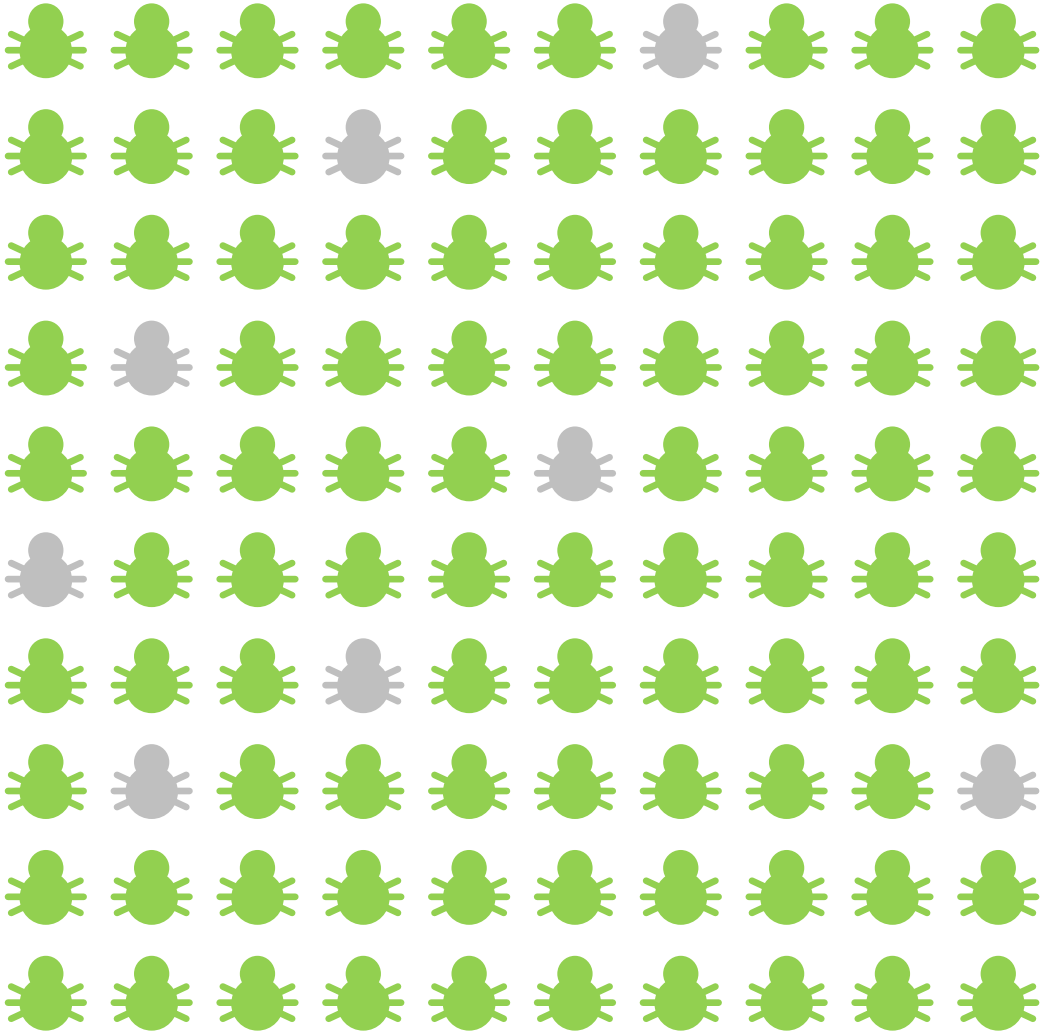




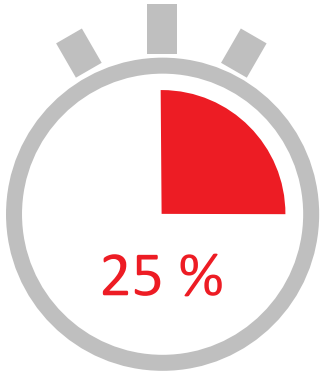
Wartungsaufwand

Migrationskosten

Automatisierungskosten



AI Test Clustering

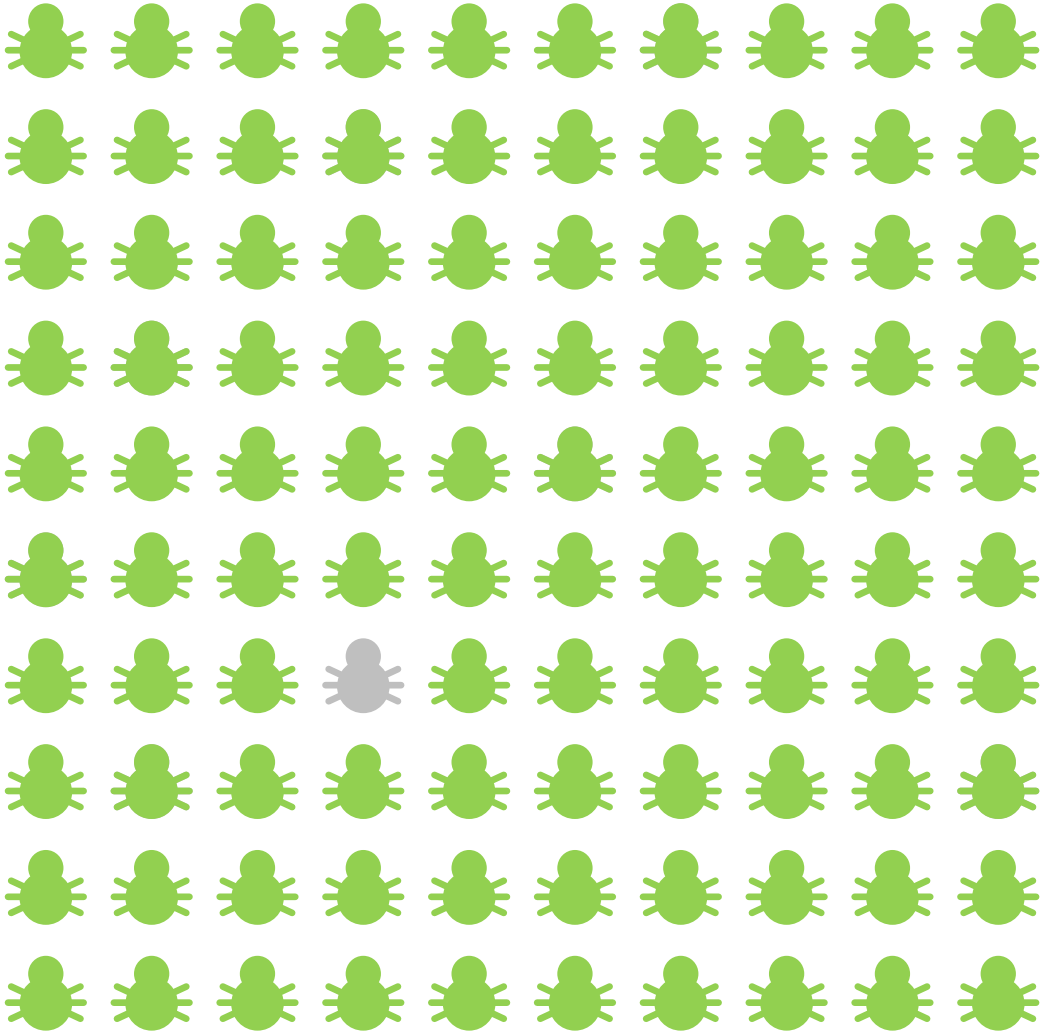


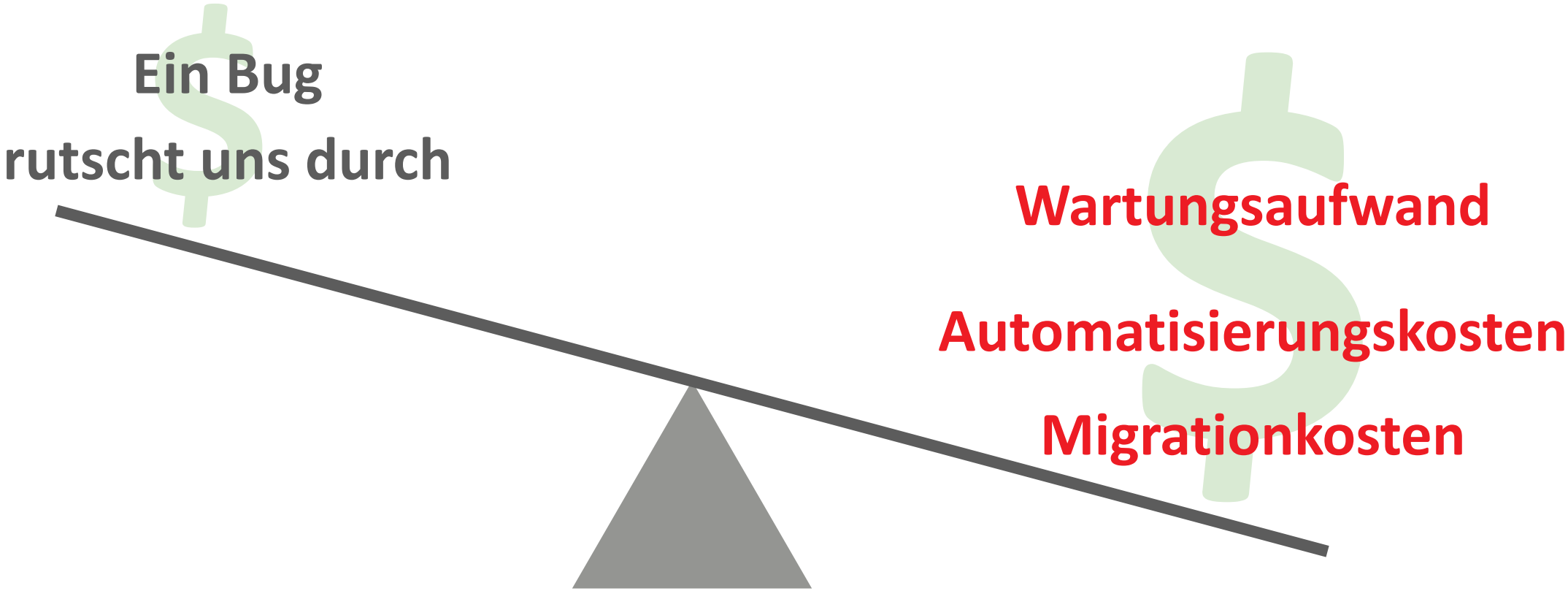


Wartungsaufwand

Migrationskosten

Automatisierungskosten

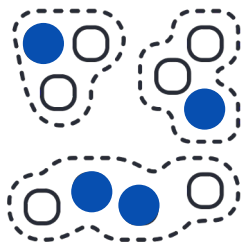



Ein Bug
rutscht uns durch
Wartungsaufwand
Automatisierungskosten
Migrationkosten

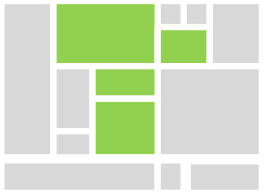
Wie sieht das in der Praxis aus?

Finanzdienstleister

Test-Suite Migration



Cluster & Auswahl



Coverage



Bugs



Test-Code
von 1700
Tosca-Tests

Lokales
OpenSource
Modell

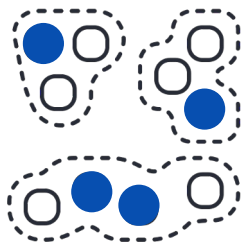
Embeddings

AI Test Clustering

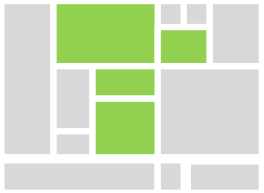


Tests zum
Behalten

Wie viel % der
Tests behalten?



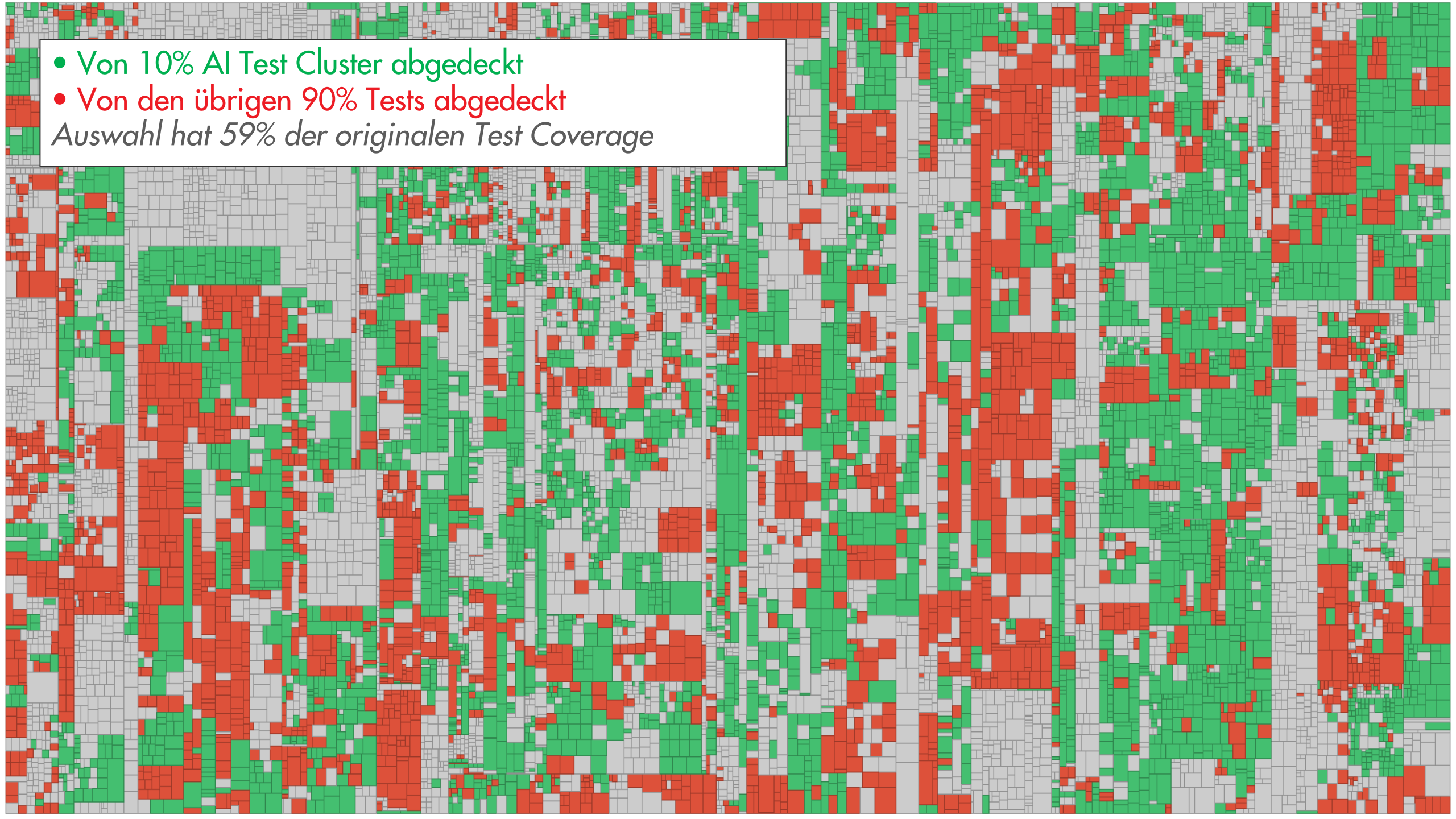
Cluster & Auswahl

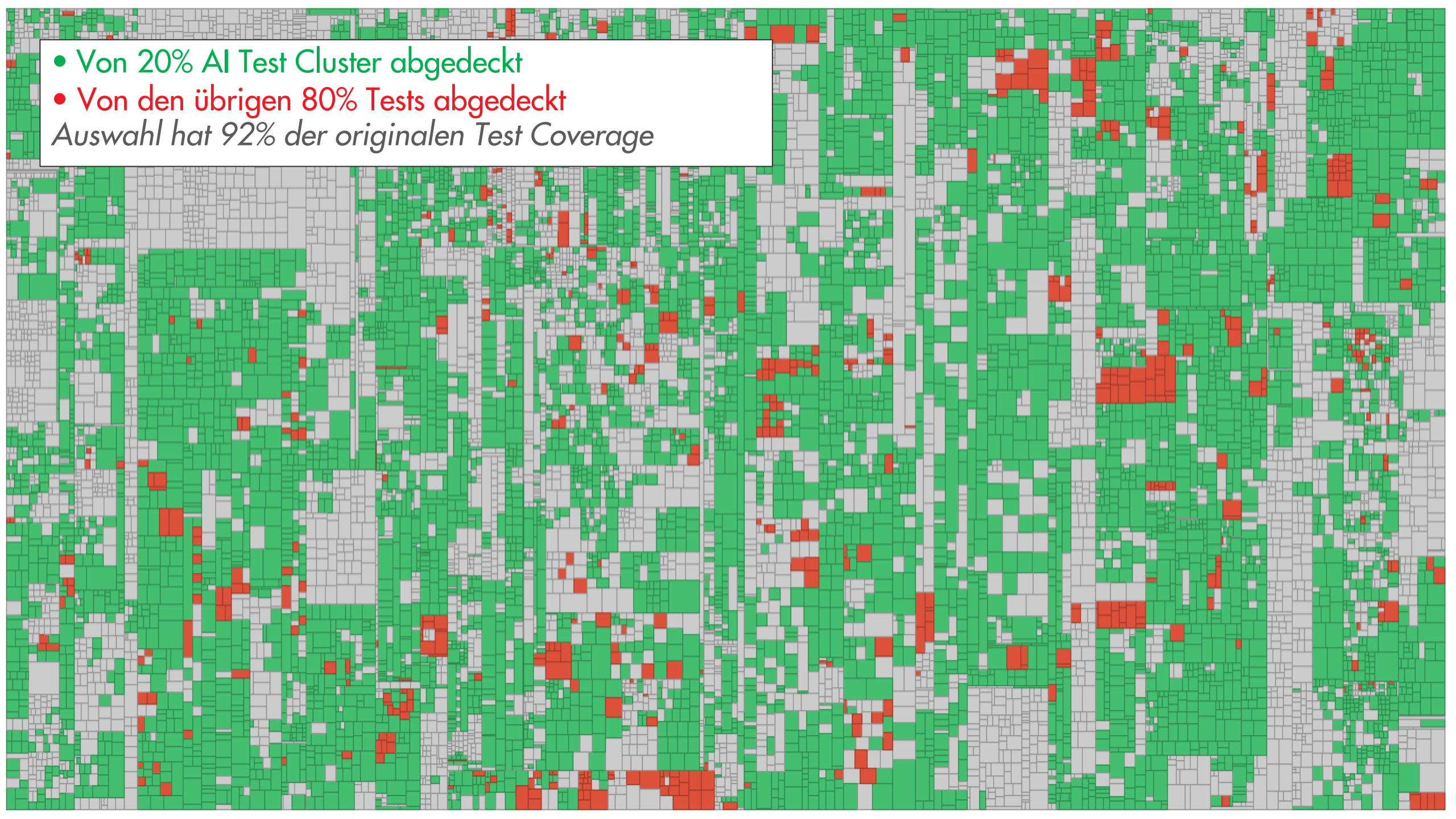


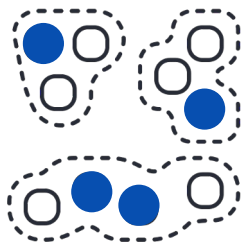
Coverage



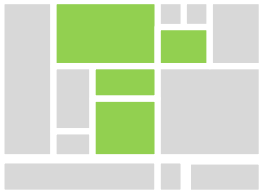
Bugs


• Von 10% AI Test Cluster abgedeckt
• Von den übrigen 90% Tests abgedeckt
Auswahl hat 59% der originalen Test Coverage


• Von 20% AI Test Cluster abgedeckt
• Von den übrigen 80% Tests abgedeckt
Auswahl hat 92% der originalen Test Coverage



Cluster & Auswahl



Coverage

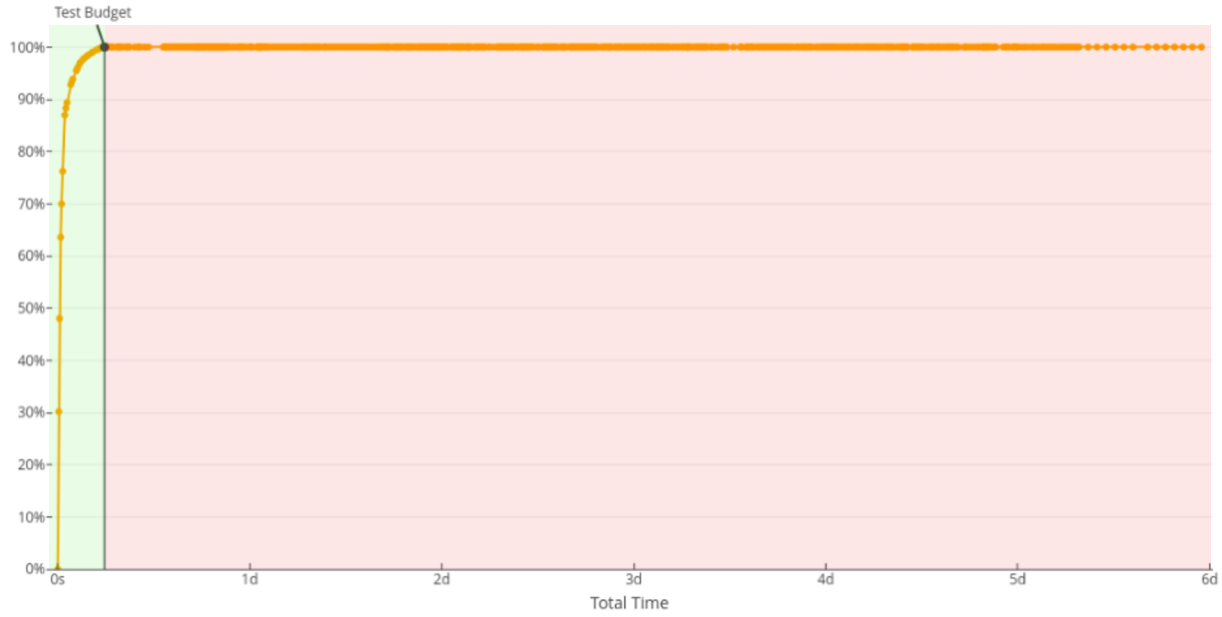


Bugs



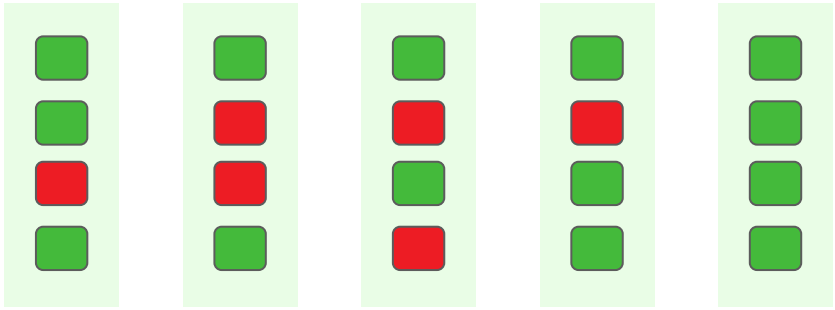
Quarantäne & Evaluierung

häufig selten



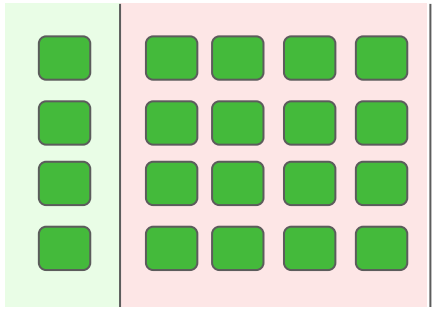
AI Test Clustering Mo - Fr

20%



Wochenende

Alle Tests



Ergebnis

37

Personentage / Jahr

weniger Aufwand für Release-Tests

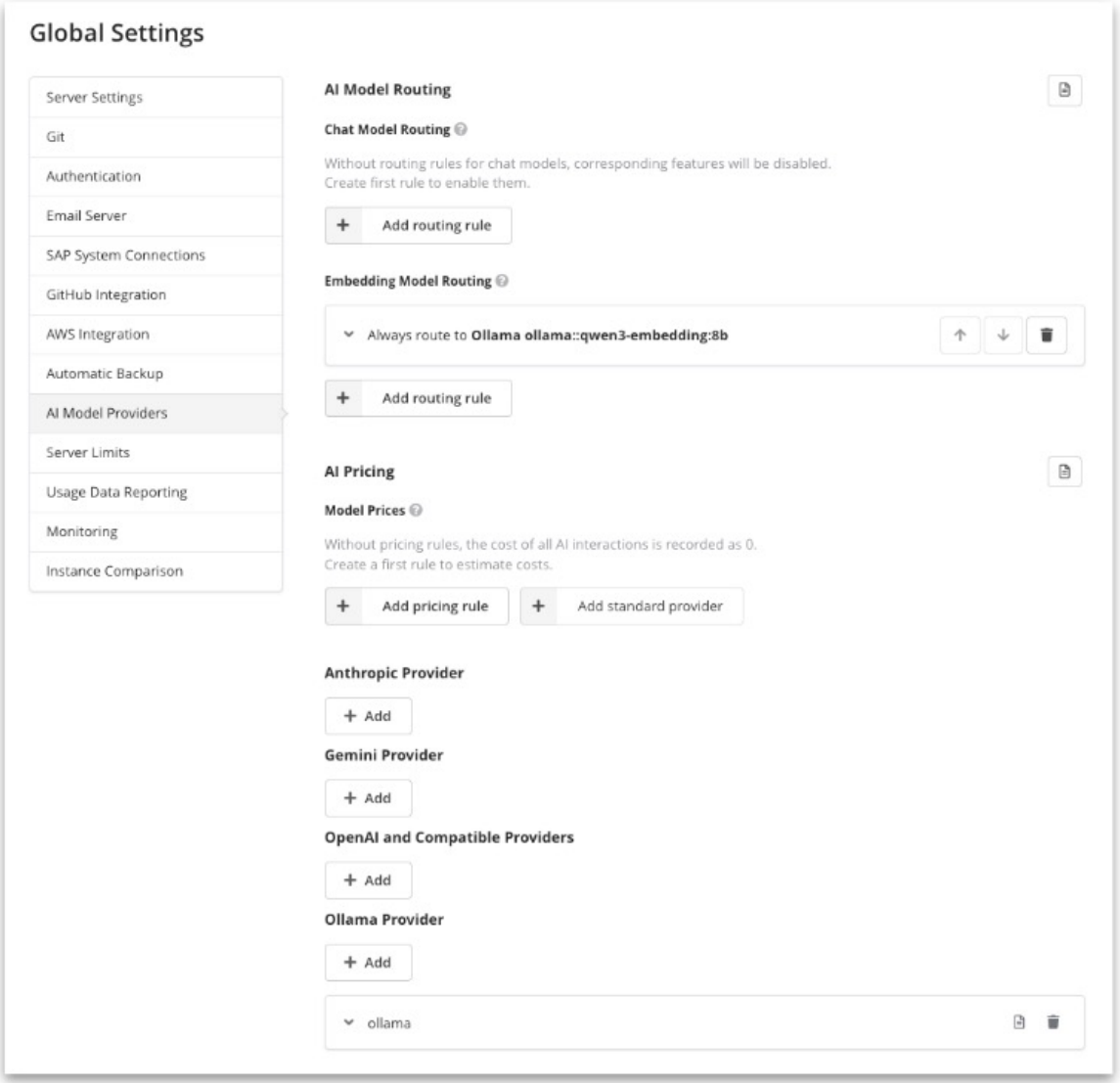
> 400

Personentage

Einsparung beim Migrationsaufwand

Wie nutze ich das in Teamscale?

AI-Provider einrichten



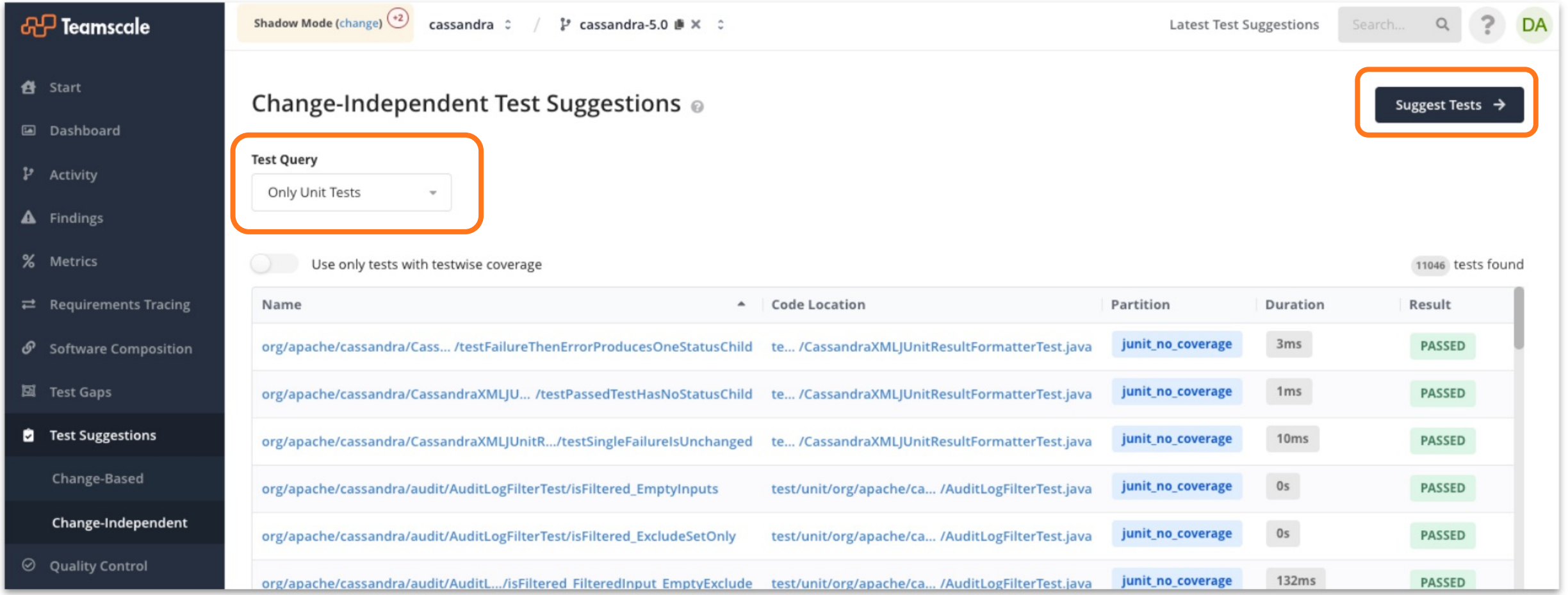
Claude

Gemini

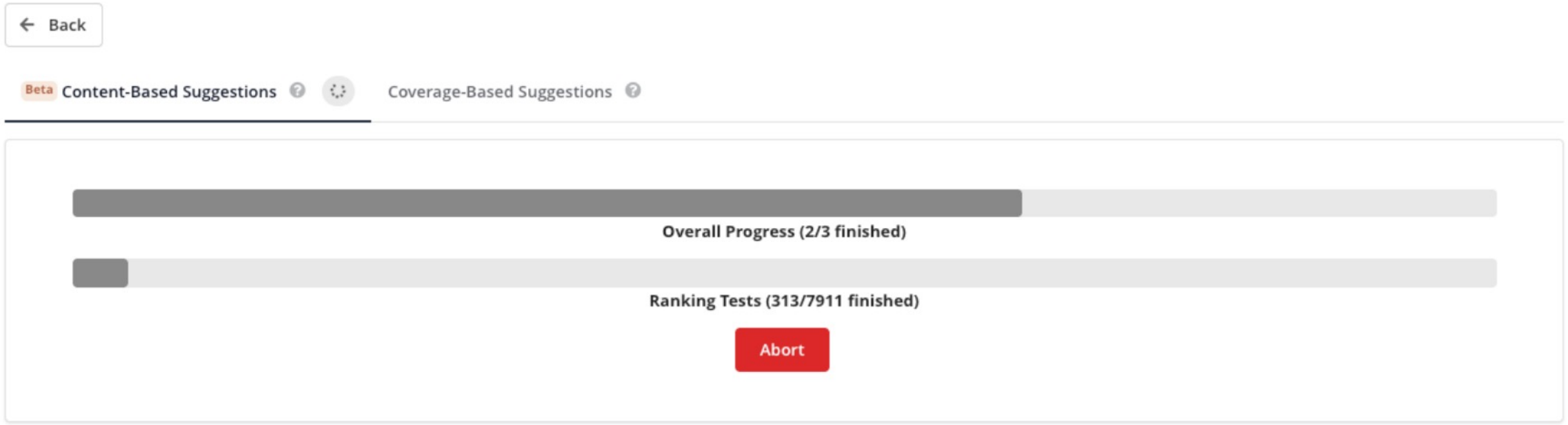
Lokale Modelle

ChatGPT

Tests vor-selektieren (optional)

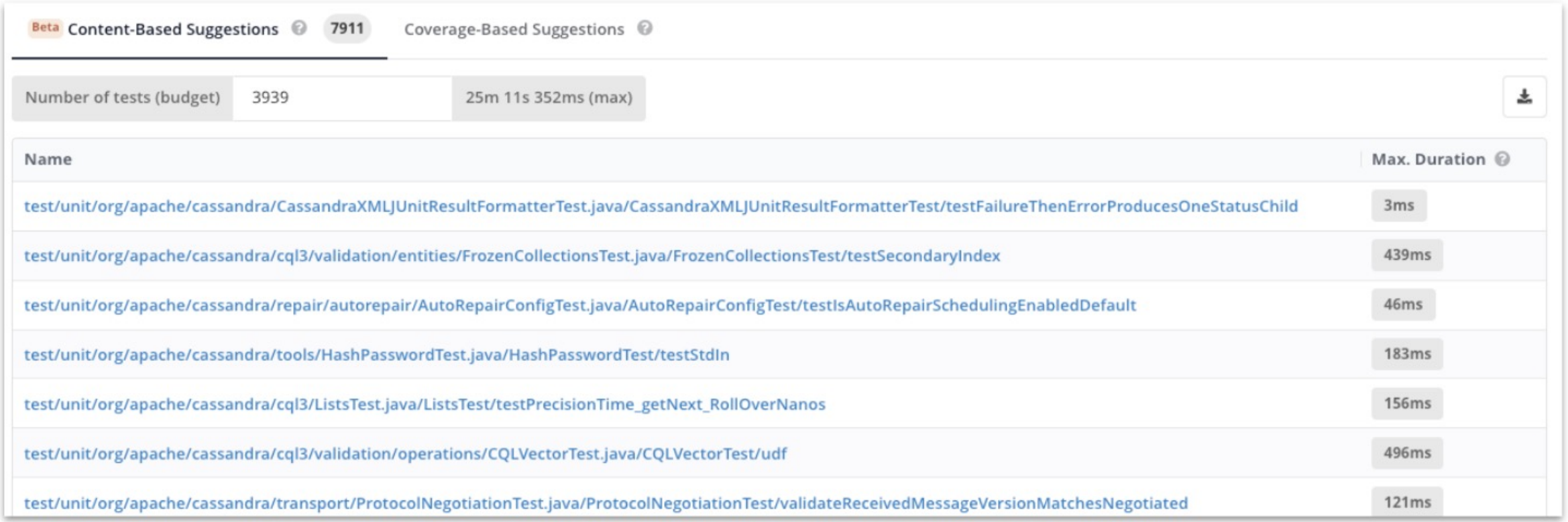


Warten…



~8000 Tests
~5min mit Gemini
~30min lokal auf Macbook

Liste herunterladen



Fazit

- Redundanz in Test-Suites kostet bei Laufzeit und Wartung

  → Durch Test-Suite Minimierung die komplette Test-Suite seltener Laufen lassen (aber in der Regel nicht wegwerfen!)
- Für Migrationsprojekte hilft Test-Selektion bei der Priorisierung
- Anwendung von AI Test Clustering sehr einfach – keine Coverage nötig

Danke fürs Zuhören

Die Folien und weitere Inhalte gibt's hier





Kommt gerne an unseren Stand 🙂

Teamscale
by CQSE

Kontakt – Ich freue mich auf Diskussionen 😉



Stefan Brand
brand@cqse.eu

Teamscale
by CQSE