

How Core Web Vitals Will Affect Google Rankings in 2021

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Solutions & DevRel / Vercel



What to expect from this talk.

- Background and Introduction
- Core Web Vitals & SEO
- Improving Performance
- Measuring Performance

Background & Introduction

Why should you care about web performance?

100ms = **1%**

Latency

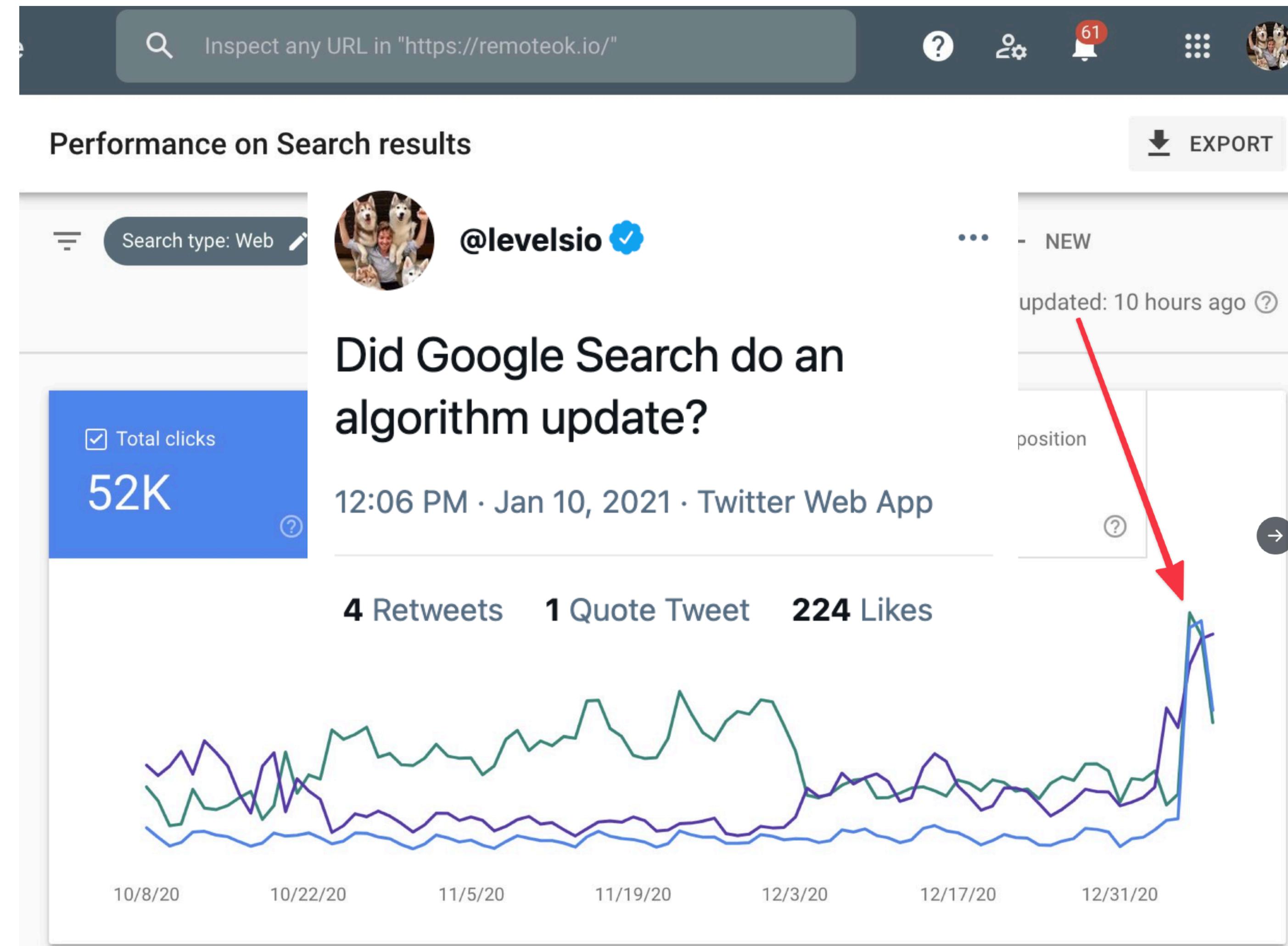
Fewer Sales

Amazon (2009)

100ms → **1%**
Less Latency **More Revenue**

Walmart (2012)

Better performance, better SEO



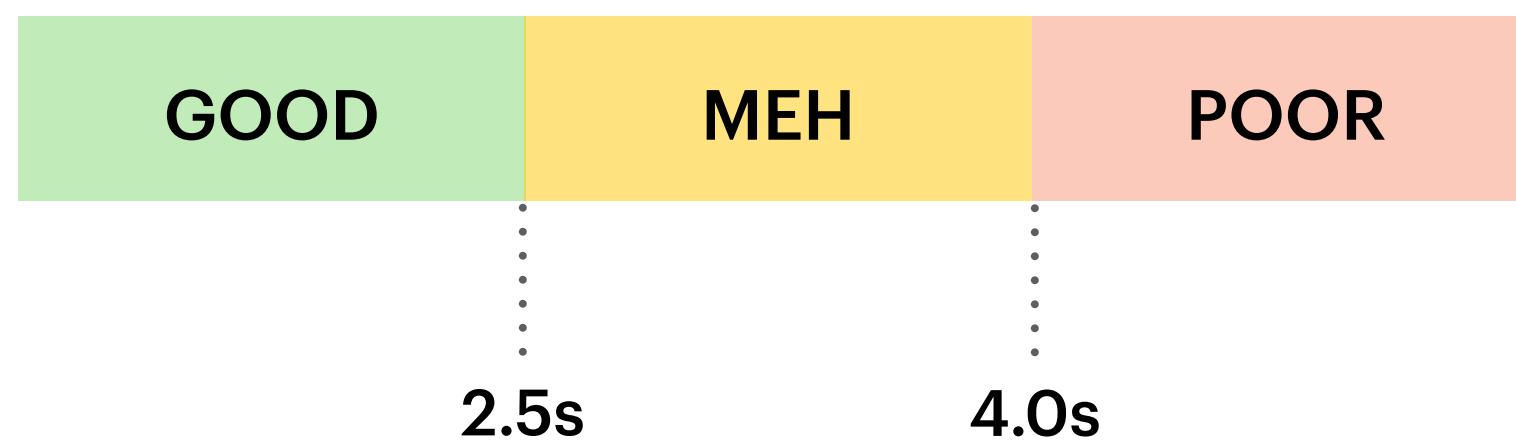
Core Web Vitals

How can we measure the *actual* user experience?

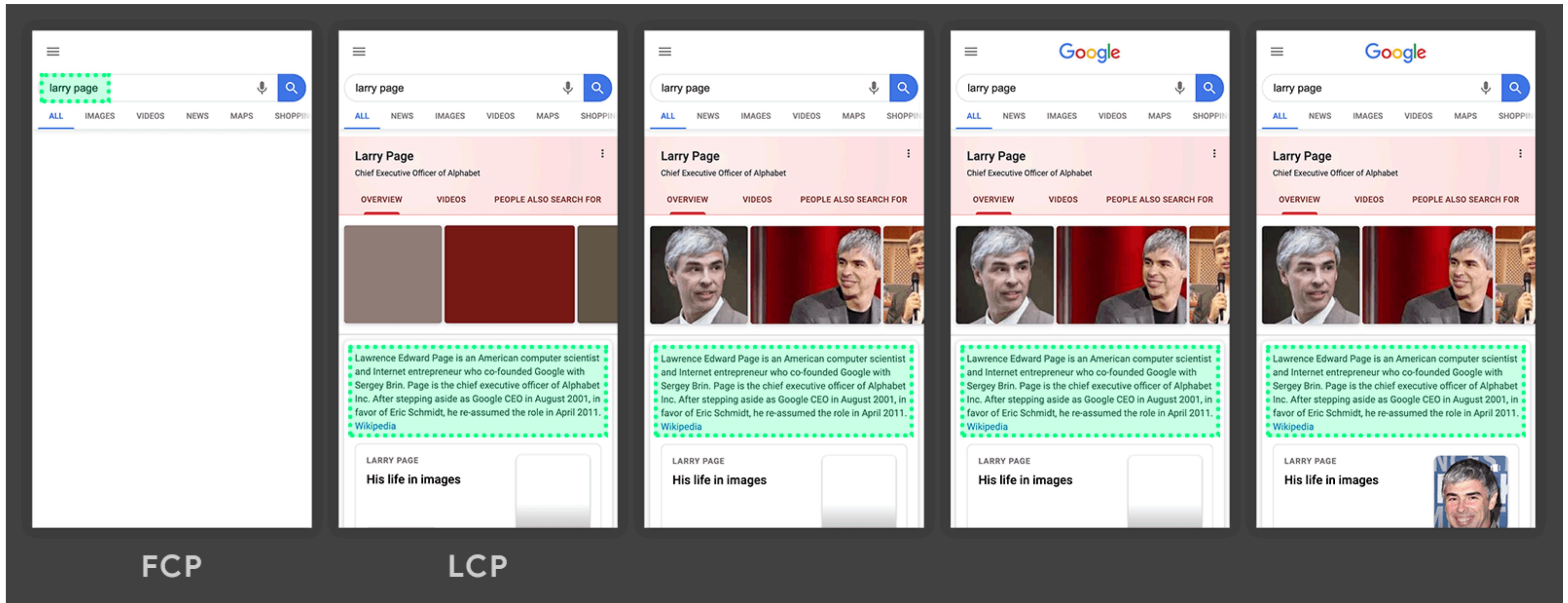
(Loading)

LCP

Largest Contentful Paint



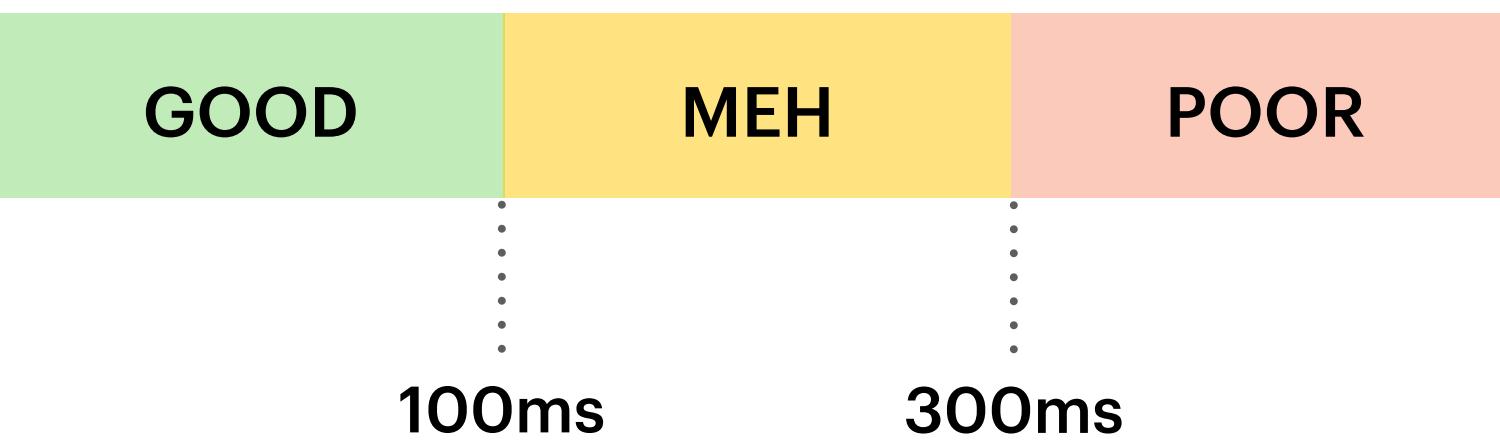
<https://web.dev/lcp>



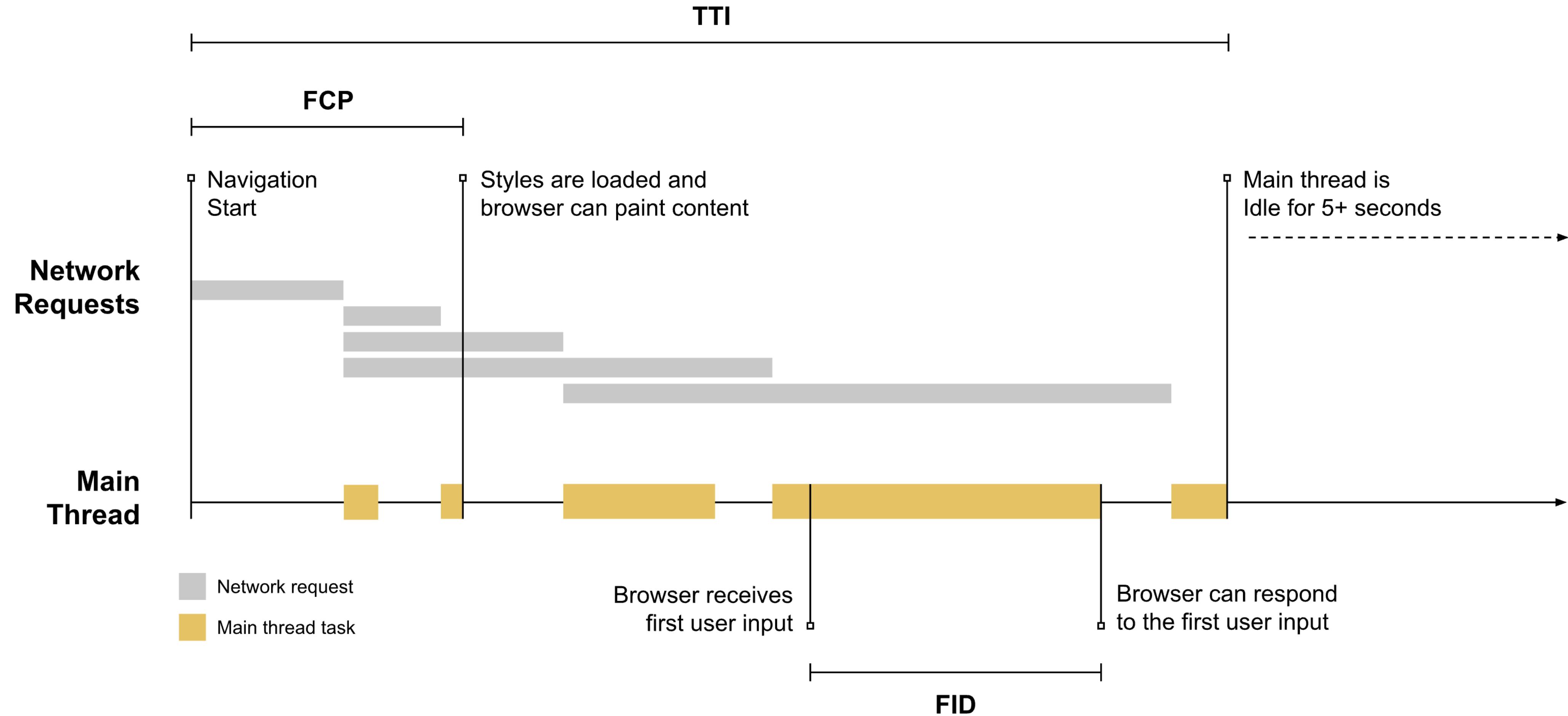
(Interactivity)

FID

First Input Delay



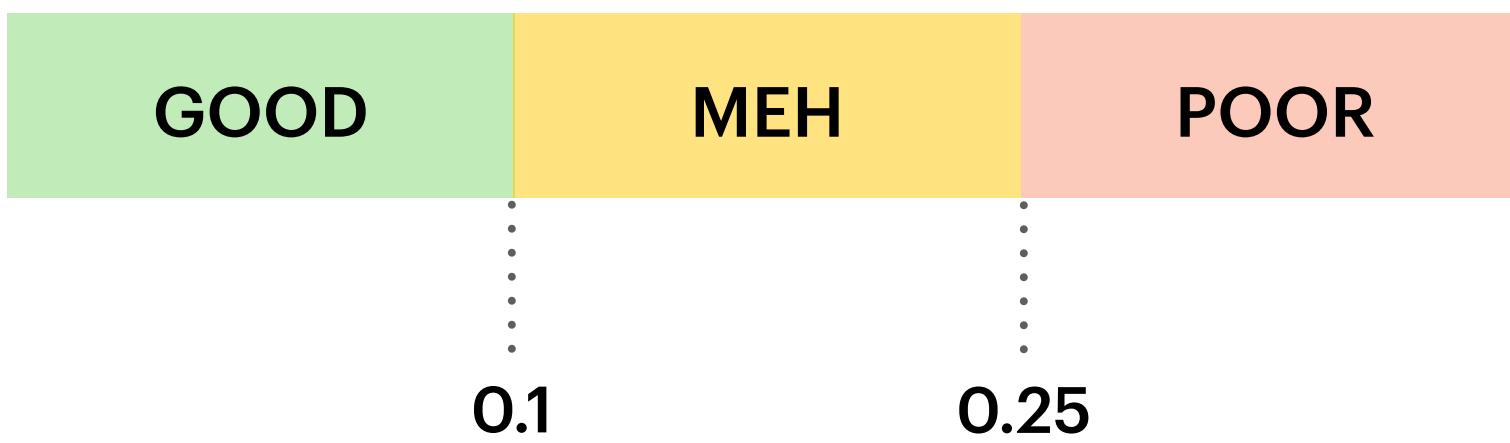
<https://web.dev/fid>



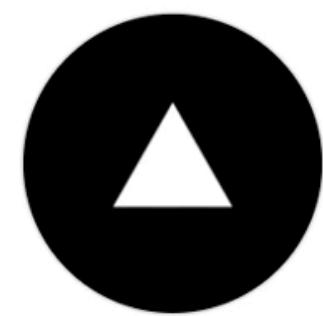
(Visual Stability)

CLS

Cumulative Layout Shift



<https://web.dev/cls>



Vercel

ENTERPRISE

New Project

docs

- docs.zeit.sh Production 3h
- docs-n1omom8a2.vercel.sh Latest 16m

96

Visit



vercel/front

Updated 16m ago

next-site

- nextjs.org Production 1d
- next-site-j6gwf94q.vercel.sh Latest 16m

100

Visit



vercel/front

Updated 16m ago

front

- vercel.com Production 3h
- front-pexzn17k2.vercel.sh Latest 16m

93

Visit



Recent Activity



shuding deployed docs (0e45b7f in usage-billing-limits) to **docs-git-usage-billing-limits.vercel.sh** 16m



shuding deployed next-site (0e45b7f in usage-billing-limits) to **next-site-git-usage-billing-limits.vercel.sh** 16m



shuding deployed front (0e45b7f in usage-billing-limits) to **front-git-usage-billing-limits.vercel.sh** 16m



raunofreiberg deployed front (5c12fdf in redeploy-with-cache) to **front-git-redeploy-with-cache.vercel.sh** 31m



igorklobov deployed front (0730503 in igorklobov-testing-02-03) to **front-git-igorklobov-testing-02-03.vercel.sh** 32m



igorklobov deployed next-site (0730503 in igorklobov-testing-02-03) to **next-site-git-igorklobov-testing-02-03.vercel.sh** 32m

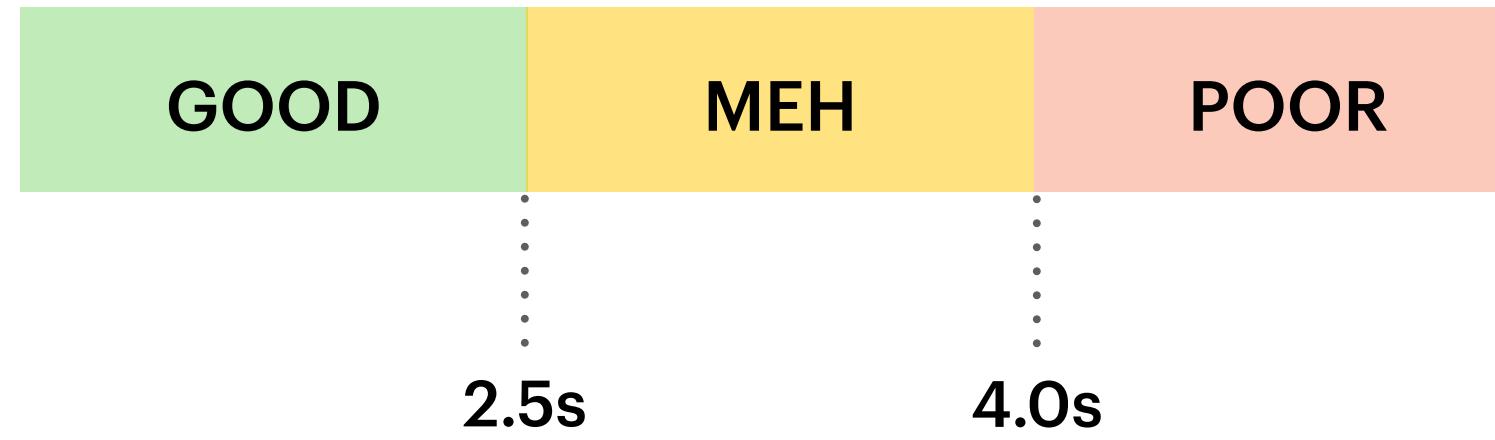


igorklobov deployed docs (0730503 in igorklobov-testing-02-03) to **docs-git-igorklobov-testing-02-03.vercel.sh** 32m

(Loading)

LCP

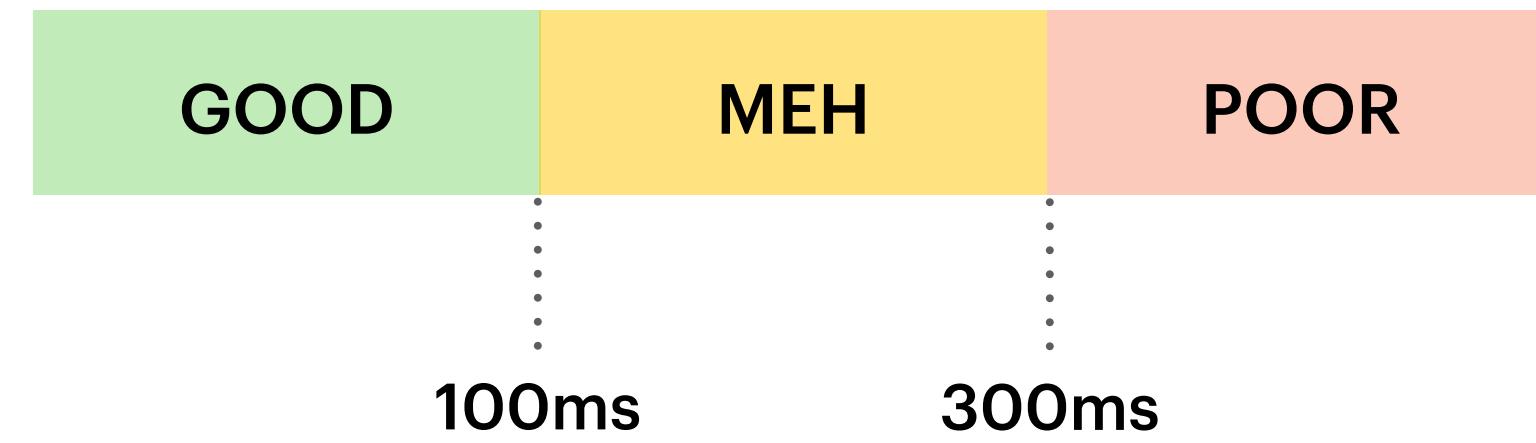
Largest Contentful Paint



(Interactivity)

FID

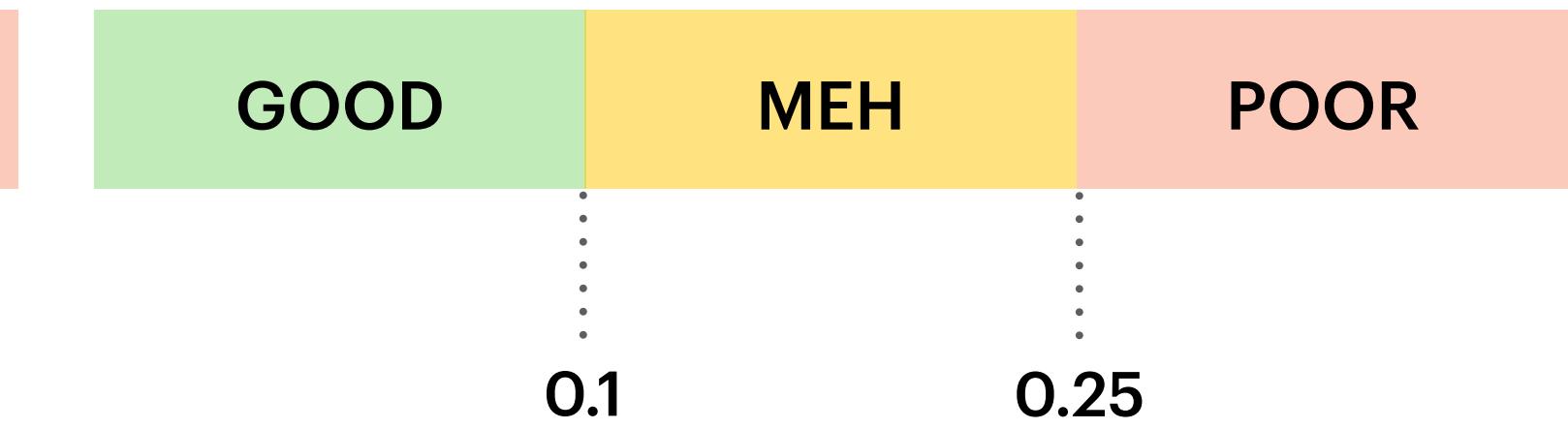
First Input Delay



(Visual Stability)

CLS

Cumulative Layout Shift



Improving Performance

What are some **practical strategies** to improve your Core Web Vitals?

The biggest companies choose Next.js for React in production



Pre-rendering

- Generate HTML in advance for each page, on the server
- Static Generation or Server-Rendering
- Allow Google to index your content immediately
- “Automatic Static Optimization”

Optimize Images

- Use width and height to prevent layout shift
- Lazy-load images as they enter the viewport
- Use modern image formats (WebP, AVIF)
- Serve correctly sized images using srcset
- Provide blur-up placeholders

<https://youtu.be/h0gj4gOjz44>

Monorepos

Friday, August 28th 2020



Shu Ding
@shuding_



Igor Klopov
@iklopov



Steven
@styfle



Javi Velasco
@javivelasco



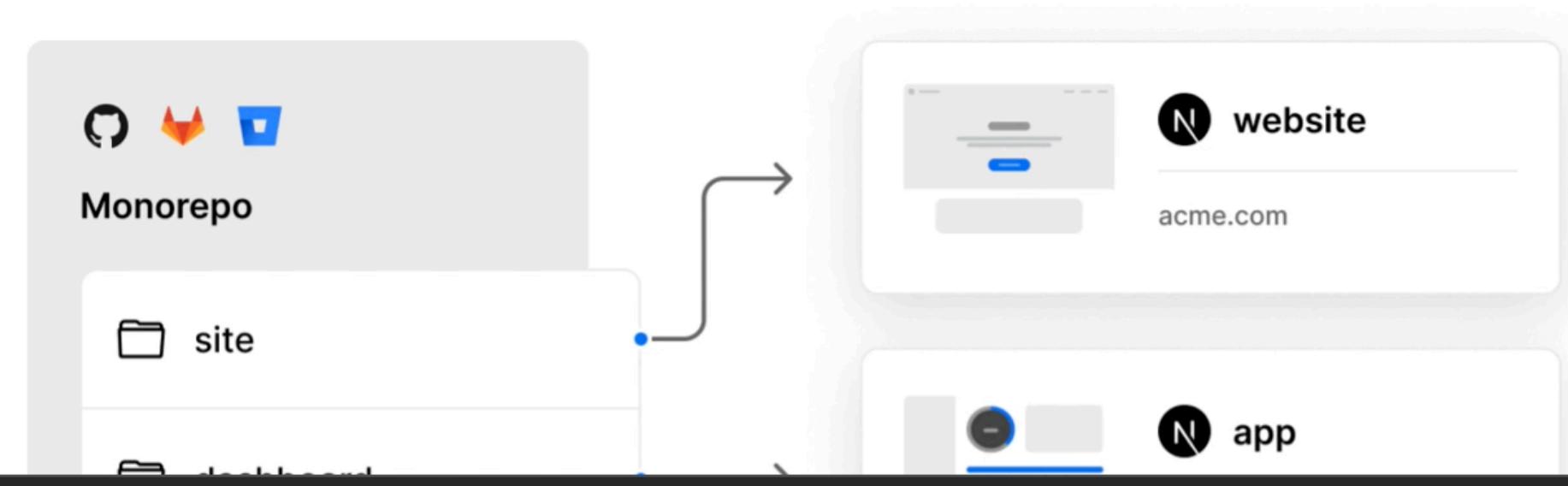
Christopher Skillicorn
@skllcrn



Leo Lamprecht
@notquiteleo

Vercel now supports monorepos for improved flexibility at scale. From the same Git repository, you can set up multiple projects to be built and deployed in parallel.

Monorepos let your team use multiple programming languages and frameworks, collaborate better, and leverage [micro frontend](#) architectures.



Elements Console Sources Network Performance Memory Application Security Lighthouse Components Profiler

Preserve log Disable cache Online

Filter Hide data URLs All XHR JS CSS Img Media Font Doc WS Manifest Other Has blocked cookies Blocked Requests

5 ms 10 ms 15 ms 20 ms 25 ms 30 ms 35 ms 40 ms 45 ms 50 ms 55 ms 60 ms 65 ms 70 ms 75 ms 80 ms 85 ms 90 ms 95 ms 100 ms 105 ms 110 ms

Recording network activity...

Perform a request or hit ⌘ R to record the reload.

[Learn more](#)

```
import Image from 'next/image'

function Home() {
  return (
    <>
      <h1>My Homepage</h1>
      <Image
        src="/me.png"
        alt="Picture of the author"
        width={500}
        height={500}
      />
      <p>Welcome to my homepage!</p>
    </>
  )
}

export default Home
```

```
import Image from 'next/image'

function Home() {
  return (
    <>
      <h1>My Homepage</h1>
      <Image
        src="/me.png"
        alt="Picture of the author"
        width={500}
        height={500}
      />
      <p>Welcome to my homepage!</p>
    </>
  )
}

export default Home
```

```
<div class="screen_geist_screen_yq3wR">
  ><div class="banner_banner_3vrgK banner_hidden_3J19s invert-theme">...</div>
  ><div class="header_wrapper_3uGfW">...</div>
    <div id="reach-skip-nav" data-reach-skip-nav-content></div>
  ><aside class="post_aside_3YpsT">...</aside>
  ><div class="jsx-3560179949">
    ><div class="post">
      ><div class="text_div_2EAra">...</div>
      ><div class="text_div_2EAra">...</div>
        <div id="preview-divider"></div>
    ><div class="geist-hide-on-dark">
      ><div style="text-align:center; margin:40px auto" data-bbox="380 360 618 428">
        ><div style="display:inline-block; max-width:100%; overflow:hidden; position:relative; box-sizing:border-box; margin:0" data-bbox="380 430 618 680">
          ><div style="box-sizing:border-box; display:block; max-width:100%" data-bbox="380 430 618 460"> 2
            
          <div style="display:flex; justify-content:center; align-items:center; gap:10px; margin-top:10px" data-bbox="380 680 618 710">
            <div style="text-align:center" data-bbox="380 680 450 710">
              <img alt="Icon for the first step" data-bbox="380 680 450 710"/>
              <p data-bbox="380 710 450 730">1. Create a new Vercel project
            </div>
            <div style="text-align:center" data-bbox="450 680 520 710">
              <img alt="Icon for the second step" data-bbox="450 680 520 710"/>
              <p data-bbox="450 710 520 730">2. Deploy to Vercel
            </div>
            <div style="text-align:center" data-bbox="520 680 590 710">
              <img alt="Icon for the third step" data-bbox="520 680 590 710"/>
              <p data-bbox="520 710 590 730">3. Monorepo integration
            </div>
          </div>
        </div>
      </div>
    </div>
    <p class="jsx-264211344">The architecture of a monorepo deployed to Vercel.</p>
  </div>
  ><div class="geist-hide-on-light">...</div>
  ><h2 class="undefined">...</h2>
  ><div class="text_div_2EAra">...</div>
  ><div style="text-align:center; margin:40px auto" data-bbox="380 890 618 950">
    <p class="jsx-264211344">Creating a new Vercel project for a directory within a monorepo.</p>
  </div>
</div>
```

```
import Image from 'next/image'

const myLoader = ({ src, width, quality }) => {
  return `https://example.com/${src}?w=${width}&q=${quality || 75}`
}

const MyImage = (props) => {
  return (
    <Image
      loader={myLoader}
      src="/me.png"
      alt="Picture of the author"
      width={500}
      height={500}
    />
  )
}
```

```
import Image from 'next/image'

const myLoader = ({ src, width, quality }) => {
  return `https://example.com/${src}?w=${width}&q=${quality || 75}`
}

const MyImage = (props) => {
  return (
    <Image
      loader={myLoader}
      src="/me.png"
      alt="Picture of the author"
      width={500}
      height={500}
    />
  )
}
```

Optimize Fonts

- Use a variable font
- Preload your font file
- Self-host instead of Google Fonts
- Use font-display: optional to prevent layout shift

```
<link
  rel="preload"
  href="/fonts/inter-var-latin.woff2"
  as="font"
  type="font/woff2"
  crossorigin="anonymous"
/>
```

```
@font-face {  
    font-family: 'Inter';  
    font-style: normal;  
    font-weight: 100 900; // Range of weights supported  
    font-display: optional;  
    src: url(/fonts/inter-var-latin.woff2) format('woff2');  
    unicode-range: U+0000-00FF, U+0131, ... ...;  
}
```

Measuring Performance

How do we know we improved performance for **real users?**

98

<https://leerob.io/>

▲ 0-49 ■ 50-89 ● 90-100 ⓘ

Field Data — Over the previous 28-day collection period, field data shows that this page **passes** the [Core Web Vitals](#) assessment.

■ First Contentful Paint (FCP) 2 s ● First Input Delay (FID) ⓘ 17 ms
38% 56% 6% 98% 1% 1%

● Largest Contentful Paint (LCP) ⓘ 2 s ● Cumulative Layout Shift (CLS) ⓘ 0
89% 7% 4% 100%

Show Origin Summary

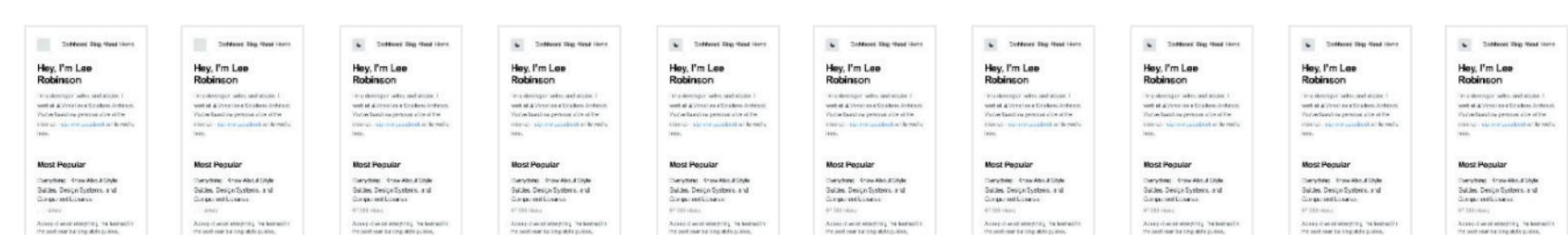
Lab Data

● First Contentful Paint 1.7 s ● Time to Interactive 2.4 s

● Speed Index 1.7 s ● Total Blocking Time 100 ms

● Largest Contentful Paint ⓘ 2.2 s ● Cumulative Layout Shift ⓘ 0

Values are estimated and may vary. The [performance score](#) is calculated directly from these metrics. [See calculator](#).



Diagnostics — More information about the performance of your application. These numbers don't [directly affect](#) the Performance score.

● User Timing marks and measures — 4 user timings

● Keep request counts low and transfer sizes small — 38 requests • 232 KiB

● Largest Contentful Paint element — 1 element found

Dashboard Blog About Home

Hey, I'm Lee Robinson

I'm a developer, writer, and creator. I work at [Vercel](#) as a Solutions Architect. You've found my personal slice of the internet — [sign my guestbook](#) while you're here.

Most Popular

Everything I Know About Style Guides, Design Systems, and Component Libraries

67,385 views

A deep-dive on everything I've learned in the past year building style guides, design systems, component libraries, and



Analytics

Production

Updated just now



Mobile

P75

Last Day

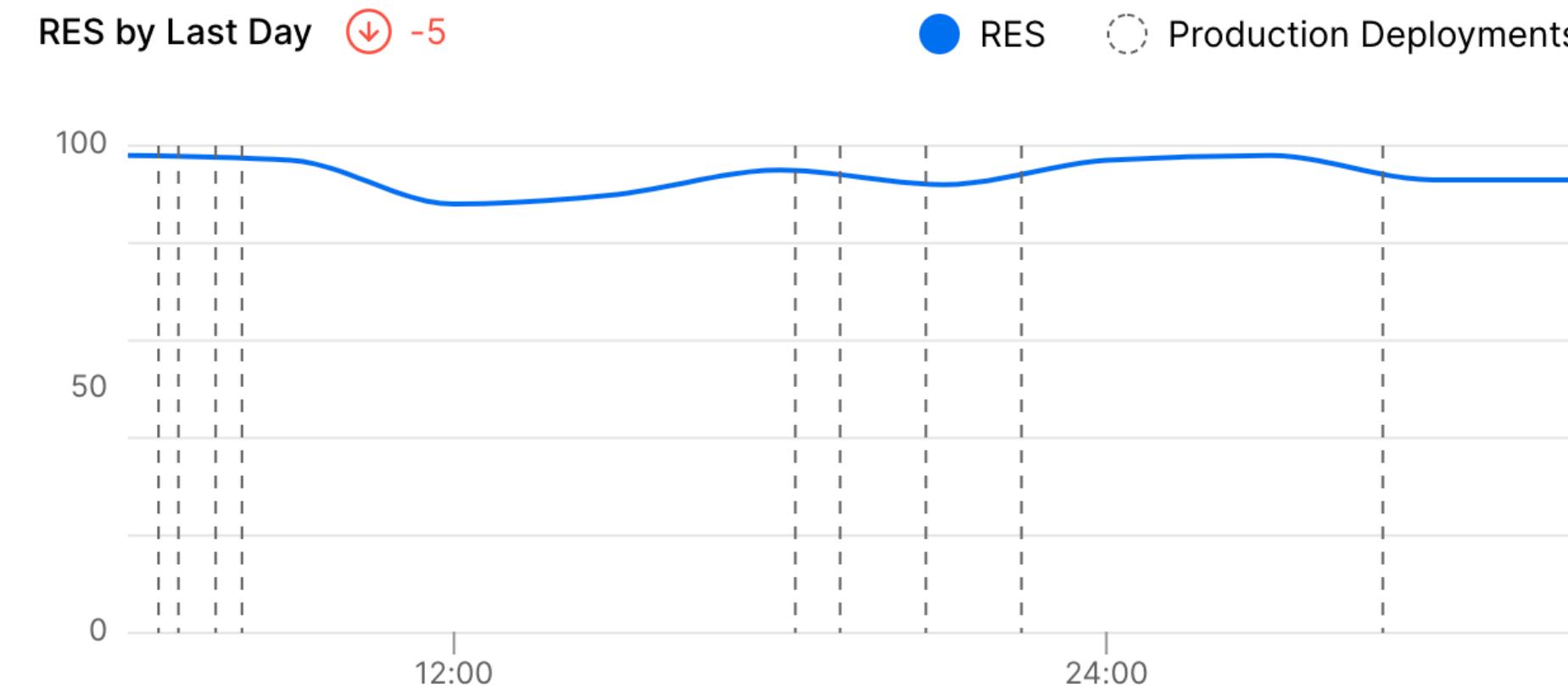
By 3 Hours

Real Experience Score



18,689 Data Points

RES by Last Day



First Contentful Paint

1.93 s



Largest Contentful Paint

1.91 s



Cumulative Layout Shift

0

First Input Delay

99 ms

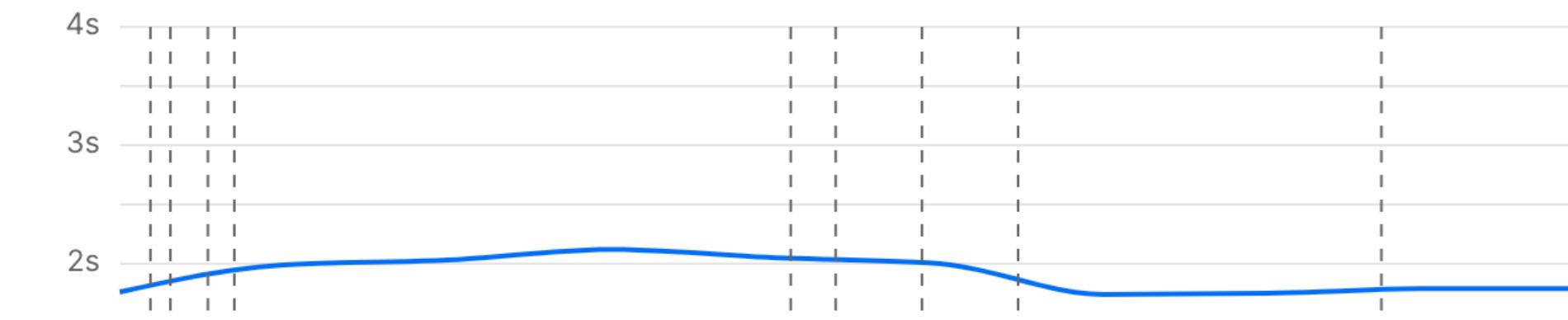


Good

✓ Below 2.336s

When the browser renders the first bit of content from the DOM, providing the first feedback to the user that the page is actually loading.

FCP by Last Day

↑ 0.03svercel.com/analytics

Pages

Search...

Sort

Pages Names

URLs

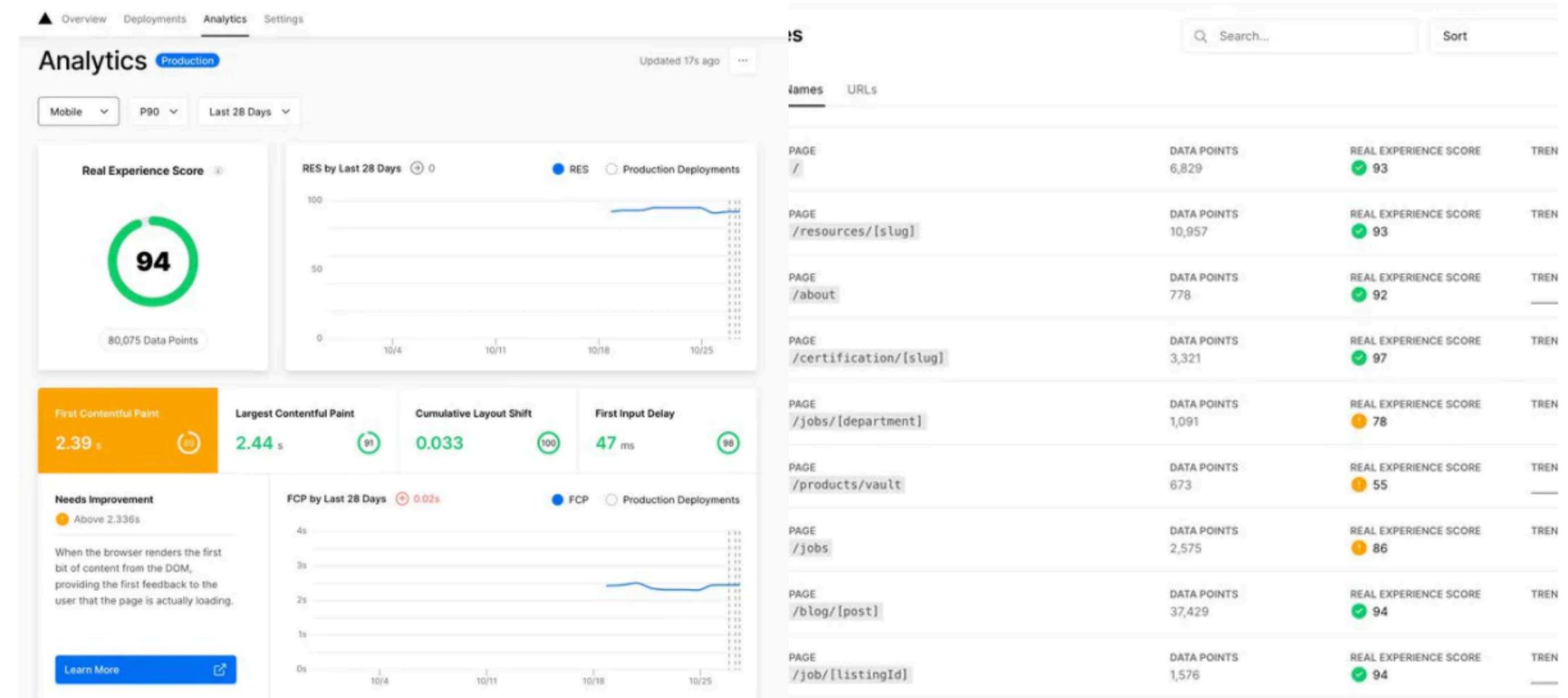
PAGE	DATA POINTS	REAL EXPERIENCE SCORE	TREND
/login	7,713	✓ 100	
/new/git/external	818	✓ 96	
/support/request	2,746	! 85	
/home	717	✓ 99	
/[teamSlug]/[project]	792	✓ 91	
/dashboard	2,212	! 90	
/notifications/email-confirmed	441	✓ 100	
/dashboard/projects	81	! 84	



Jeff Escalante
@jescalan



Super excited to see [@vercel](#) analytics announced at [#nextjsconf](#) - we have been testing it at [@HashiCorp](#) and are loving it. Here's a little preview of the dashboard, even with per-page breakdowns. So helpful for us to work on our site's performance

147 1:17 PM - Oct 27, 2020

Hashicorp uses Vercel analytics to stay true to their performance goals

