

# Building Cross-Platform GUI Applications using ONLY Rust

By Kushashwa Ravi Shrimali

Software Developer, Abnormal Security

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<https://youtube.com/c/kushashwaraviShrimali/>

!whoami

Software Developer @ Abnormal Security  
(Backend)

Previously: Lightning AI, Quansight, NVIDIA (US)  
OSS: PyTorch Contributor, Lightning Flash Lead  
PyTorch Lightning Maintainer, OpenCV



**KRS**  
OPEN-SOURCED

**I'LL BUILD MY OWN OS, BROWSER, TEXT  
EDITOR, COMPILER ONE DAY!**

I INTEND DO IT LIVE...



What is this talk about?  
(iced-rs + Rust)

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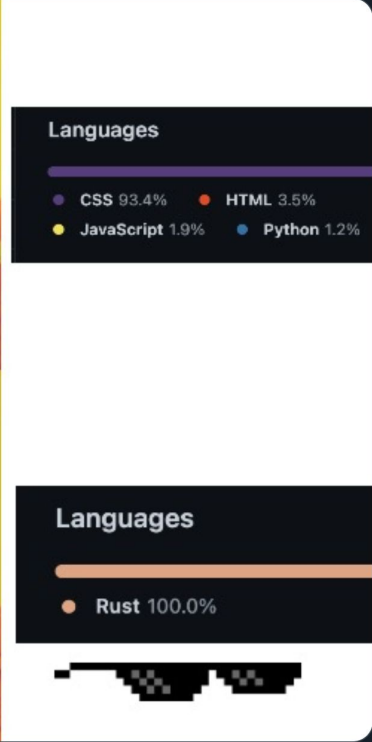


Kushashwa Ravi Shrimali (/Kush)

@kushashwa



Developing my first app in [#Rust](#) - Coming soon!



7:42 PM · Jan 14, 2023 · 587 Views

- You *can* build full-stack apps using Rust.
- They can be *cross-platform*.
- You can *test* your app's biz logic.
- You can *optimize* your way out.
- Styling is *accessible*.
- Pop!OS is using it - why does it matter?

What is this talk *not* about?



# What is this talk *not* about?

- HTML is bad, CSS is bad, JS is bad.
- Rust is the best.
- If you use any of {HTML, CSS, JS} - this talk is not for you.

# So why Iced?



mmstick · 4 mo. ago · *edited 4 mo. ago*

Desktop Engineer

You are quick at noticing. Jeremy just started working on this yesterday. This is a design demo application that will showcase all of the widgets and theming capabilities available in the COSMIC design system. This will also be the COSMIC library that we'll be using to develop COSMIC applications from.

The UX team has been carefully designing widgets and applications over the last year. We are now at the point where it is critical for the engineering team to decide upon a GUI toolkit for COSMIC. After much deliberation and experimentation over the last year, the engineering team has decided to use Iced instead of GTK.

Iced is a native Rust GUI toolkit that's made enough progress lately to become viable for use in COSMIC. Various COSMIC applets have already been written in both GTK and Iced for comparison. The latest development versions of Iced have an API that's very flexible, expressive, and intuitive compared to GTK. It feels very natural in Rust, and anyone familiar with Elm will appreciate its design.

COSMIC Settings will be developed in tandem with, and from, this toolkit.













Source: [https://www.reddit.com/r/pop\\_os/comments/xs87ed/comment/ijjc35b/](https://www.reddit.com/r/pop_os/comments/xs87ed/comment/ijjc35b/)

YT Monitoring App (By KRS)







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Thank you for being here, this was an app by Kushashwa Ravi Shrinimal

 <p><b>KushashwaRaviShrinimal</b></p> <p>He does something...</p> <p>747</p>	 <p><b>mohiWankhade</b></p> <p>He does something...</p> <p>7400</p>	 <p><b>atulKumar</b></p> <p>He does something...</p> <p>74000</p>
 <p><b>mazharKajani</b></p> <p>He does something...</p> <p>1000000</p>	 <p><b>yatharthWankhade</b></p> <p>He does something...</p> <p>2</p>	 <p><b>AKS14</b></p> <p>He does something...</p> <p>100</p>

KRS



## YouTube Monitoring App Development (Live)

Kushashwa Ravi Shrimali

Public

6 videos • 15 views • Last updated on Oct 23, 2022



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KRS



### 1 Automating HTML Generation for my App | Python + Electron JS | Morning Stream

Kushashwa Ravi Shrimali • 120 views • Streamed 3 months ago

1:31:06

KRS



### 2 Electron JS with generating automating HTML for my app | Morning Stream

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### 3 Electron JS with Auto-generated HTML today | Morning Stream

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### 4 Electron JS with Auto-generated HTML (Live)

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### 5 Happy Dhanteras | Electron JS with Auto-generated HTML (Live)

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43:01

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### 6 YouTube Monitoring App | Integrating UI in our Electron App

Kushashwa Ravi Shrimali • 85 views • Streamed 2 months ago

50:57

1.1 render\_cards.rs x 3.2 yt\_monitor.rs 2

/home/krshrimali/Documents/Projects/Stream/YouTube-Monitoring-App-Rust-Iced/src/yt\_monitor.rs impl Sandbox for YTMonitor > update

```
24 }
23 }
22
21 fn title(&self) -> String {
20     String::from("YT Monitoring App (by KRS)")
19 }
18
17 fn update(&mut self, message: Self::Message) {
16     match message {
15         render_cards::Message::ThemeChanged(theme) => { : ThemeType
14             self.theme = match theme {
13                 render_cards::ThemeType::Dark => Theme::Dark,
12
11         allow _ [rust]
10         #![allow(..)]
9         #![allow(allow)]
8         #![allow(allow)]
7
6         allow~
5         AllowedFieldNamesForSorting
4         GlobalAlloc (use std::alloc::GlobalAlloc)
3         render_cards::AllowedFieldNamesForSorting::Subscribers
2         render_cards::AllowedFieldNamesForSorting::IsLiveStatus
1         render_sel
75         allow
1         }
2     }
```

Allocator (use std::alloc::Allocator)~	[LSP]	Interface
AllocError (use std::alloc::AllocError)~	[LSP]	Struct
AllowStdIo (use iced::futures::io::AllowStdIo)~	[LSP]	Struct
AllowedFieldNamesForSorting (use self::render_cards::AllowedFieldNamesForSorting)~	[LSP]	Enum
alloc	[LSP]	Module
allow~	[Snippet]	Snippet
AllowedFieldNamesForSorting	[Buffer]	Text
GlobalAlloc (use std::alloc::GlobalAlloc)	[LSP]	Interface
render_cards::AllowedFieldNamesForSorting::Subscribers	[LSP]	Variable
render_cards::AllowedFieldNamesForSorting::IsLiveStatus	[LSP]	Variable

INSERT sorting 17 1 0 0 0 0 <~/Documents/Projects/Stream/YouTube-Monitoring-App-Rust-Iced/src/yt\_monitor.rs[+] ( 75:48) (32%/183)

10:13 / 1:25:22

# Demo Time!

# Thank You!



- YouTube Monitoring App: (Rust)  
<https://github.com/krshrimali/YouTube-Monitoring-App-Rust-Iced>
  - YouTube Monitoring App: (JS)  
<https://github.com/krshrimali/youtuber-monitoring-app>
  - Image Annotator App (Rust): <https://github.com/krshrimali/image-annotator-rust>
  - My first hand experience:  
<https://krshrimali.github.io/posts/2022/12/i-started-building-an-app-using-rust-and-here-is-how-it-went.../>
- 
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