

# Introduction Video

University of Aalto

Context:

- Text underlined with dashes are links
- Acknowledgements at the end of the presentation
- Text using Noto Serif are supposed to be “creative” elements
- List of tables, images, and links are in the Appendix at the end
  - Download the presentation from Link to slides: GitHub:pawarherschel/UniOfAalto:condensed-slides.pdf to view them

---

Herschel Pravin Pawar

December 22, 2024

# = Outline

= Self Introduction .....	3
= Who am I? .....	4
= Coventry University Summer School Game Jam .....	5
= Result .....	6
= Themes .....	7
= The Team .....	8
= Main Mechanic .....	9
= Player Architecture .....	10
= Game Maker ToolKit's 2023 Game Jam .....	11
= Result .....	12
= Theme .....	13
= Gameplay .....	14
= Main Mechanic .....	15
= Bevy .....	16

# = Outline

= Other Projects .....	17
== VRCX Insights .....	18
== Output Metadata .....	19
== Booth Archiver .....	20
== Krita/GIMP Palette Generator .....	21
== Kait .....	22
= Goals for 2024 .....	23
== Goal – Short Description – Why? .....	24
= Why Aalto .....	25
== Heavily Inspired by .....	27
= Appendix .....	28
== List of Images .....	29
== List of Tables .....	31
== Table of Links .....	32

= Self Introduction

---

# = Who am I?



Figure 1: Image of me  
original file @ me.png



Herschel Pravin Pawar  
[sakurakat.systems](http://sakurakat.systems)

Everything you see in this video – scripts, links, and images – are a part of a Typst document available freely on GitHub under a public domain licence.



[GitHub:pawarherschel/UniOfAalto](https://github.com/pawarherschel/UniOfAalto)

= Coventry University  
Summer School Game Jam

---

Fractured Elements

## = Result

Criteria	Rank	Score*	Raw Score
Gameplay	2	3.286	3.600
Presentation	2	3.469	3.800
Creativity	3	2.739	3.000
Enjoyment	3	2.921	3.200

Table 1: Coventry University Game Jam Results

### Judge Feedback:

Visually nice platformer game with a pixel art approach and switching characters that allow either melee or ranged attacks. Multiple levels make it interesting and force the player to master their jumping and attacking skills. There is a final boss for the finale. One improvement I would suggest is that I was unsure what caused me to change between the characters - I was not sure if it was timed, depending on where I was in the level or a button press. Well done to all involved in the game and the hard work you put into it!

*Continuous Change*

---

*2D Platformer*

## = The Team



Figure 2: Us  
original file @ shashank and me.jpg

## = Main Mechanic

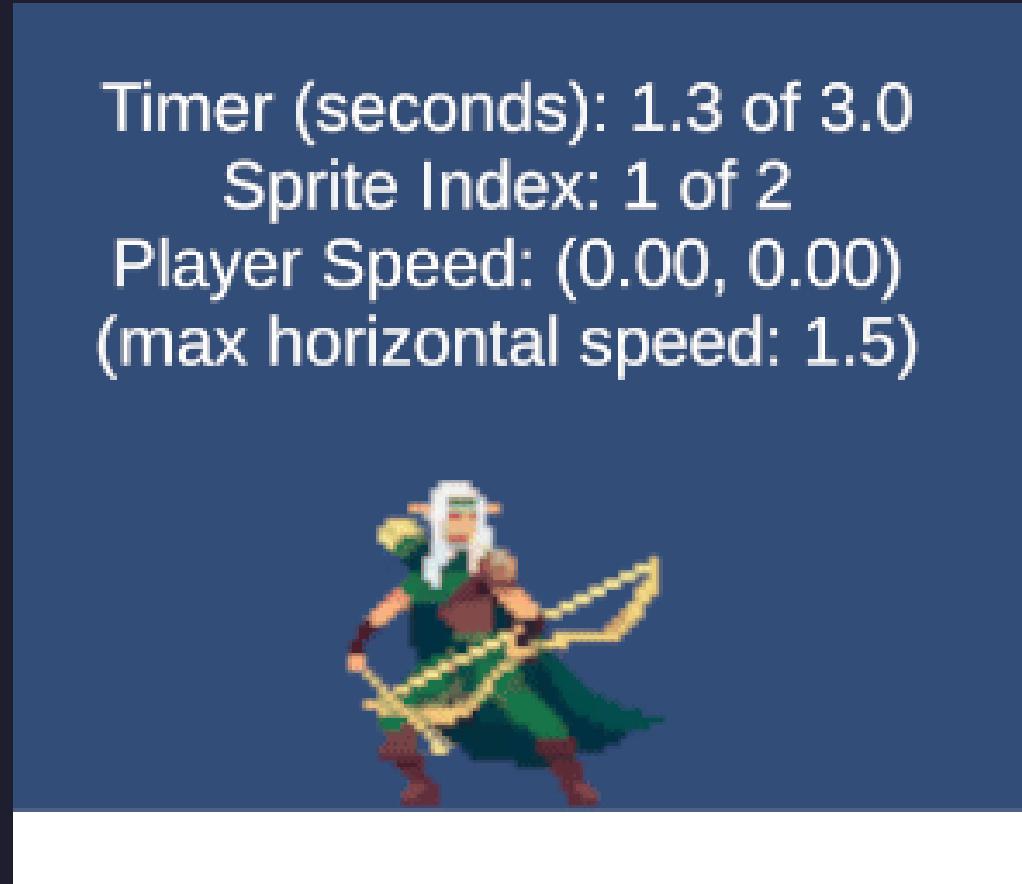


Figure 3: Hero Switching Mechanic  
original file @ hero switching.gif

# = Player Architecture

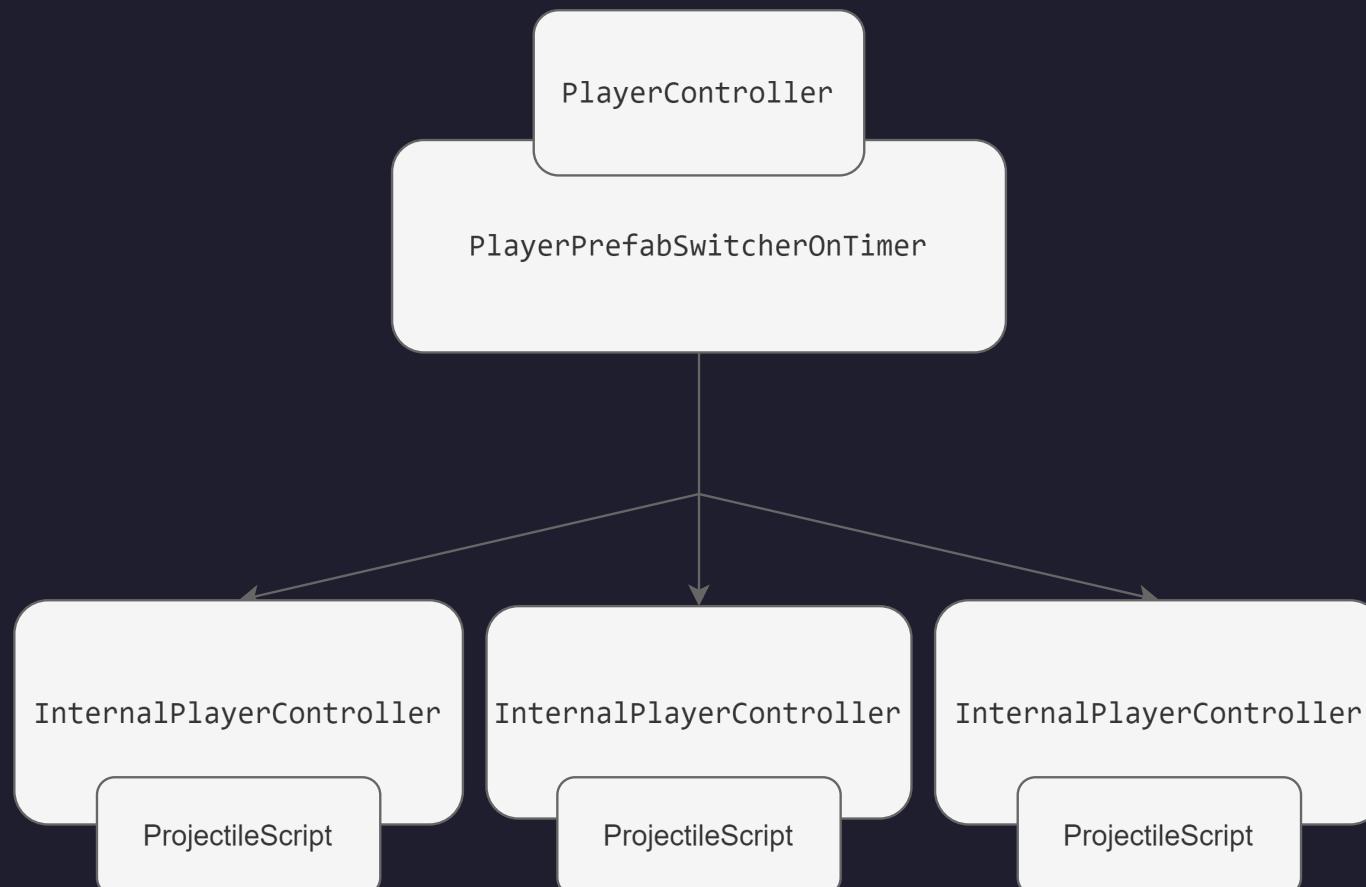


Figure 4: Player Architecture  
original file @ player.svg

= Game Maker ToolKit's  
2023 Game Jam

---

Cosmos Conquerors

## = Result

Criteria	Rank	Score*	Raw Score
Enjoyment	4296	2.237	2.583
Overall	4652	2.285	2.639
Presentation	4720	2.237	2.583
Creativity	4780	2.382	2.750

Table 2: GMTK's 2023 Game Jam Results

= Theme

*Roles Reversed*

# = Gameplay



Figure 5: Screenshot  
original file @ Cosmos Conquerors.png

## = Main Mechanic



Figure 6: All Invaders Shooting  
original file @ invaders shooting.gif

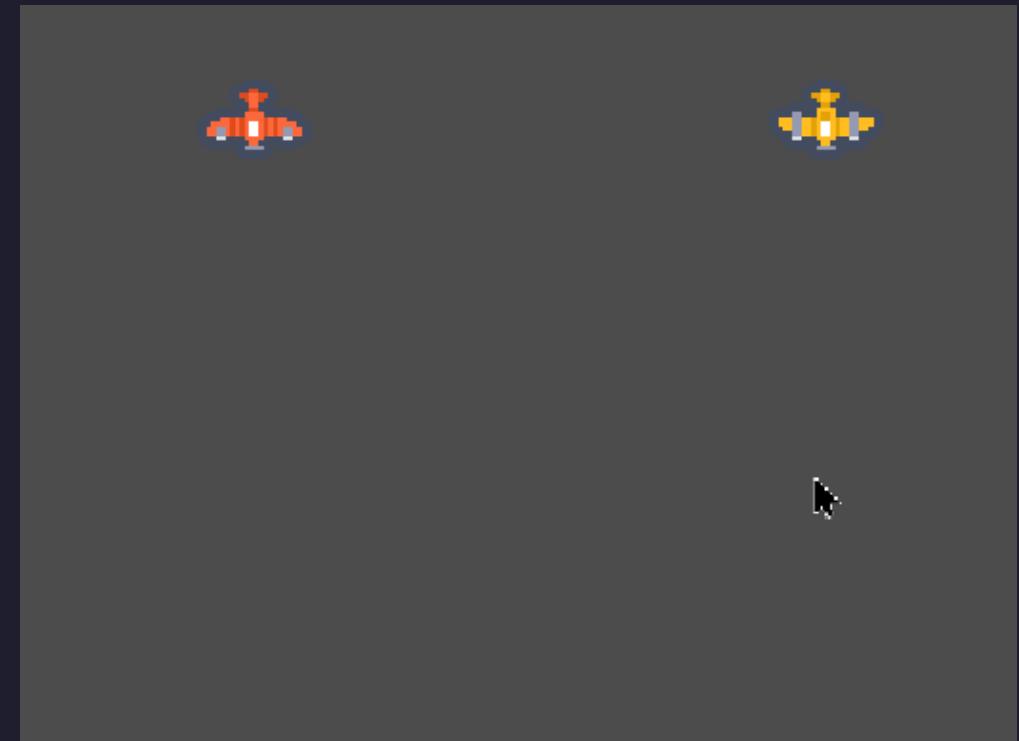


Figure 7: Two Invaders Shooting  
original file @ two invaders shooting.gif

= Bevy

---

Pong



= Other Projects

---

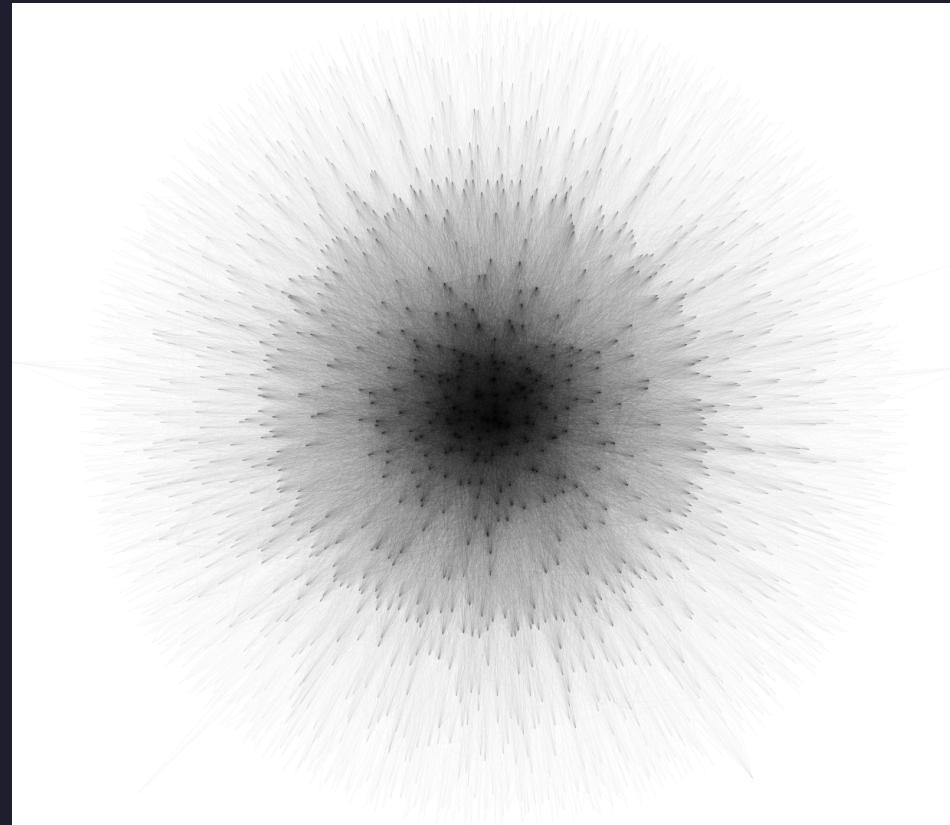


Figure 8: A *VERY* zoomed out view of the graph produced  
preview file @ cropped-direct-preview.png  
original file @ cropped-direct.jpg

# = VRCX Insights

## ≡ Output Metadata

number of labels in the DOT file:

1835 labels

total lines in the DOT file:

102,560 lines

size of svg:

33.7 MB (35,402,018 bytes)

png output code (using typst):

```
#page(height: (7680pt * 5), width: (7680pt * 5))[
    #image("dot_edge_no_label.dot.neato.with_sand.svg")
]
```

size of png produced:

3.34 GB (3,597,062,134 bytes)

# = Booth Archiver

Figure 9: One of the spreadsheets generated by the program  
original\_file @ booth.archiver.png

# = Krita/GIMP Palette Generator



Figure 10: Original Image  
preview file @ [env-preview.png](#)  
original file @ [env.png](#)



Figure 11: Quantized Image  
preview file @ [env.png.5-preview.png](#)  
original file @ [env.png.5.png](#)



Figure 12: Color palette generated with quantization level 5  
original file @ [env.png.5.png.gpl.png.linear.png](#)

= Kait

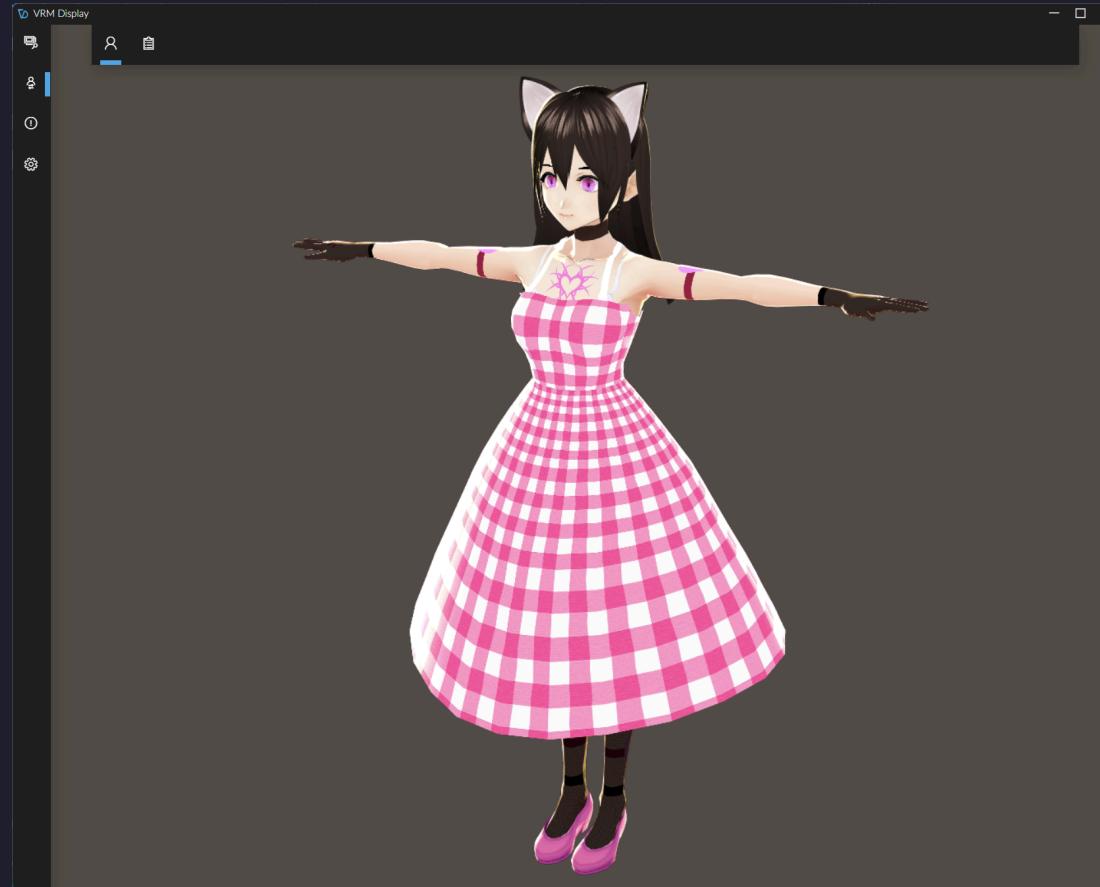


Figure 13: OC Kait - Made with the help of VRoid Studio  
original file @ kait.png

## = Goals for 2024

---

These are in no specific order

## = Goal – Short Description – Why?

- WGPU – an implementation of WebGPU spec in rust – to interact with the GPU
- GPGPU – Hardware Acceleration – Offloading tasks and doing them in parallel
- Cranelift – an alternative to LLVM – creating custom scripting languages for game engines
- Technical art – bridging programming, art, and mathematics – I am fascinated by gpus and shaders
- Good Stateless Abstractions – Inspired by NixOS, functional programming, and WGPU – Creating good abstractions which reduce cognitive load
- Giving technical talks – Inspiring Others – Kate Compton inspired me, and I want to inspire others, just like her (video)

= Why Aalto

---

and also acknowledgements

## = Acknowledgement

- fivepb for helping me push through when I wasn't able to
- mlembug for going through the script
- Shashank for checking the presentation
- Divyesh for checking the script, presentation, and video
- Henna for helping me practice and pushing me towards getting higher education
- and many many many other people

## = Heavily Inspired by

- [Acerola](#) for the general vibes of the presentation
- [No Boilerplate](#) for the introduction

Made with ❤️ using

- [typst](#) [Typst](#) – an alternative to LaTeX – // sorry couldn't figure out how to do make the logo visible
- [投Touying](#) [Touying](#) – Slides
-  [Catppuccin Theme](#) – Colors 
- [JetBrains Mono](#) – General font
- [Noto Serif](#) — Font for more “creative” aspects

# = Appendix

---

The page numbers refer to the *PDF* page numbers and not the *Slide* page numbers

# = List of Images

- Figure 1: Image of me  
original file @ me.png 5
- Figure 2: Us  
original file @ shashank and me.jpg 9
- Figure 3: Hero Switching Mechanic  
original file @ hero switching.gif 10
- Figure 4: Player Architecture  
original file @ player.svg 11
- Figure 5: Screenshot  
original file @ Cosmos Conquerors.png 15
- Figure 6: All Invaders Shooting  
original file @ invaders shooting.gif 16
- Figure 7: Two Invaders Shooting  
original file @ two invaders shooting.gif 16

# = List of Images

- Figure 8: A *VERY* zoomed out view of the graph produced
  - preview file @ cropped-direct-preview.png
  - original file @ cropped-direct.jpg
- Figure 9: One of the spreadsheets generated by the program
  - original file @ booth\_archiver.png
- Figure 10: Original Image
  - preview file @ env-preview.png
  - original file @ env.png
- Figure 11: Quantized Image
  - preview file @ env.png.5-preview.png
  - original file @ env.png.5.png
- Figure 12: Color palette generated with quantization level 5
  - original file @ env.png.5.png.gpl.png.linear.png
- Figure 13: OC Kait - Made with the help of VRoid Studio
  - original file @ kait.png

## = List of Tables

- Table 1: Coventry University Game Jam Results
- Table 2: GMTK's 2023 Game Jam Results

7

13

# = Table of Links

pg no	Accompanying Text	Link Destination
1	Link to slides:GitHub:pawarherschel/ UniOfAalto:condensed- slides.pdf	<a href="https://github.com/pawarherschel/UniOfAalto/blob/main/condensed-slides.pdf">https://github.com/pawarherschel/UniOfAalto/blob/main/condensed-slides.pdf</a>
2	Coventry University Summer School Game Jam	<a href="https://github.com/pawarherschel/CovUniGJ2024">https://github.com/pawarherschel/CovUniGJ2024</a>
2	Game Maker ToolKits 2023 Game Jam	<a href="https://github.com/pawarherschel/GMTK2023">https://github.com/pawarherschel/GMTK2023</a>
2	Bevy	<a href="https://bevyengine.org/">https://bevyengine.org/</a>

# = Table of Links

pg no	Accompanying Text	Link Destination
3	VRCX Insights	<a href="https://github.com/pawarherschel/vrcx-insights">https://github.com/pawarherschel/vrcx-insights</a>
3	Booth Archiver	<a href="https://github.com/pawarherschel/booth_archiver">https://github.com/pawarherschel/booth_archiver</a>
3	Krita/GIMP Palette Generator	<a href="https://github.com/pawarherschel/krita-palette-creator">https://github.com/pawarherschel/krita-palette-creator</a>
5	sakurakat.systems	<a href="https://sakurakat.systems">https://sakurakat.systems</a>
5	GitHub:pawarherschel/Uni0fAalto	<a href="https://github.com/pawarherschel/Uni0fAalto">https://github.com/pawarherschel/Uni0fAalto</a>

# = Table of Links

pg no	Accompanying Text	Link Destination
6	Coventry University Summer School Game Jam	<a href="https://github.com/pawarherschel/CovUniGJ2024">https://github.com/pawarherschel/CovUniGJ2024</a>
6	Fractured Elements	<a href="https://pawarherschel.itch.io/fractured-elements">https://pawarherschel.itch.io/fractured-elements</a>
7	Coventry University Game Jam Results	<a href="https://itch.io/jam/summer-school-24/rate/2856755">https://itch.io/jam/summer-school-24/rate/2856755</a>
12	Game Maker ToolKits 2023 Game Jam	<a href="https://github.com/pawarherschel/GMTK2023">https://github.com/pawarherschel/GMTK2023</a>
12	Cosmos Conquerors	<a href="https://pawarherschel.itch.io/cosmos-conquerors">https://pawarherschel.itch.io/cosmos-conquerors</a>

# = Table of Links

pg no	Accompanying Text	Link Destination
13	GMTKs 2023 Game Jam Results	<a href="https://itch.io/jam/gmtk-2023/rate/2155150">https://itch.io/jam/gmtk-2023/rate/2155150</a>
17	Bevy	<a href="https://bevyengine.org/">https://bevyengine.org/</a>
17	Pong	<a href="https://github.com/pawarherschel/bevy-pong">https://github.com/pawarherschel/bevy-pong</a>
20	VRCX Insights	<a href="https://github.com/pawarherschel/vrcx-insights">https://github.com/pawarherschel/vrcx-insights</a>
21	VRCX Insights	<a href="https://github.com/pawarherschel/vrcx-insights">https://github.com/pawarherschel/vrcx-insights</a>

# = Table of Links

pg no	Accompanying Text	Link Destination
22	Booth Archiver	<a href="https://github.com/pawarherschel/booth_archiver">https://github.com/pawarherschel/booth_archiver</a>
23	Krita/GIMP Palette Generator	<a href="https://github.com/pawarherschel/krita-palette-creator">https://github.com/pawarherschel/krita-palette-creator</a>
26	WGpu	<a href="https://wgpu.rs/">https://wgpu.rs/</a>
26	Cranelift	<a href="https://cranelift.dev/">https://cranelift.dev/</a>
26	NixOS	<a href="https://nixos.org/">https://nixos.org/</a>
26	WGpu	<a href="https://wgpu.rs/">https://wgpu.rs/</a>

# = Table of Links

pg no	Accompanying Text	Link Destination
26	Kate Compton	<a href="https://www.galaxykate.com/">https://www.galaxykate.com/</a>
26	video	<a href="https://www.youtube.com/watch?v=WumyfLEa6bU">https://www.youtube.com/watch?v=WumyfLEa6bU</a>
29	Acerola	<a href="https://www.youtube.com/@Acerola_t">https://www.youtube.com/@Acerola_t</a>
29	No Boilerplate	<a href="https://www.youtube.com/@NoBoilerplate">https://www.youtube.com/@NoBoilerplate</a>
29	Typst	<a href="https://typst.app/">https://typst.app/</a>
29	Touying	<a href="https://touying-typ.github.io/">https://touying-typ.github.io/</a>

# = Table of Links

pg no	Accompanying Text	Link Destination
29	Catppuccin Theme	<a href="https://catppuccin.com/">https://catppuccin.com/</a>
29	JetBrains Mono	<a href="https://www.jetbrains.com/lp/mono/">https://www.jetbrains.com/lp/mono/</a>
29	Noto Serif	<a href="https://fonts.google.com/noto/specimen/Noto+Serif">https://fonts.google.com/noto/specimen/Noto+Serif</a>
34	Coventry University Game Jam Results	<a href="https://itch.io/jam/summer-school-24/rate/2856755">https://itch.io/jam/summer-school-24/rate/2856755</a>
34	GMTKs 2023 Game Jam Results	<a href="https://itch.io/jam/gmtk-2023/rate/2155150">https://itch.io/jam/gmtk-2023/rate/2155150</a>