Wie had ooit gedacht dat drones kapot knallen zo leerrijk kon zijn

Malarkey Rebellion

Bachelorproef door Jef Belmans

Story

Target: Jef Belmans, 21 jaar, born and raised in Antwerpen.

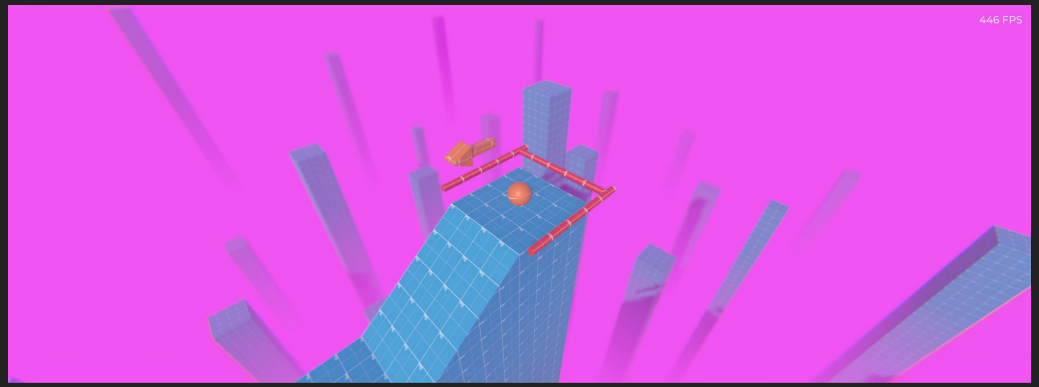
Pursuing game development

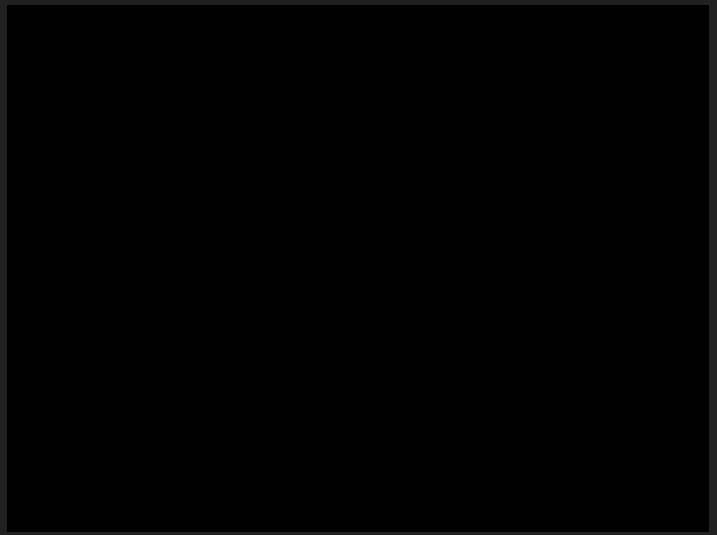
My sequel: DAE at Kortrijk

One dream

Gameplay programmer bij DICE Stockholm

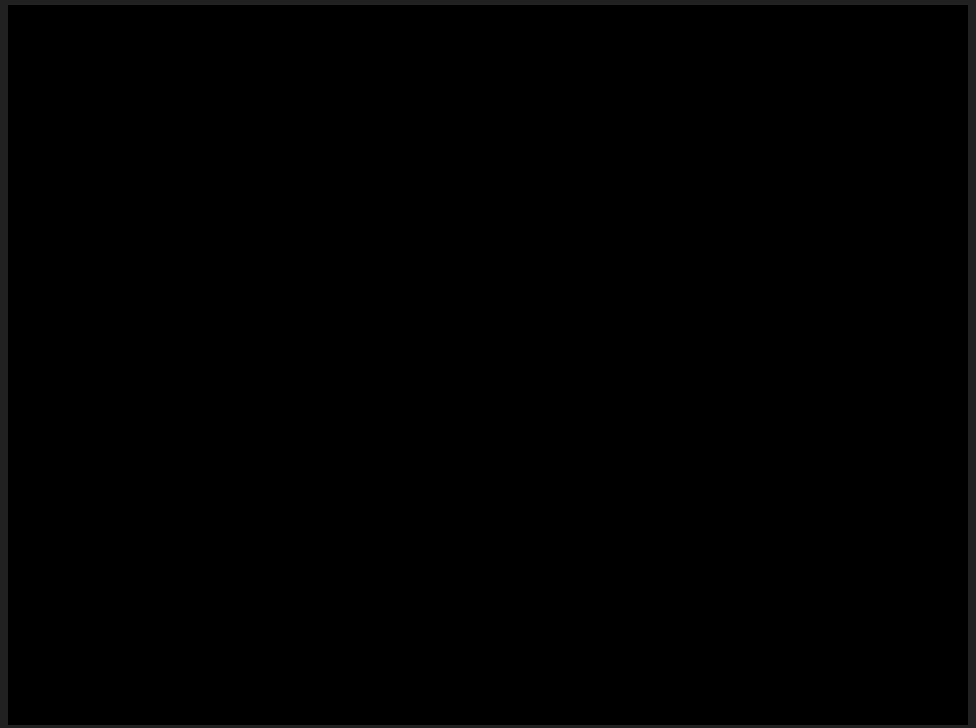
The journey






Speed has never killed anyone.
Suddenly becoming stationary,
that's what gets you.
Jeremy Clarkson
AZ QUOTES

Malarkey Rebellion is ready!



The meat (tofu if you’re vegan) of the game

- Munitie buidel
- Verschillende, modulaire vuurwapens
- Waves upon waves upon waves of danger
- Interactieve end-of-round shop
- bHaptics Tactsuit integratie
- *“What are you waiting for? Christmas?”*

Challenge #1: interacties

Unity’s XR framework is zeer mager

Kost te veel tijd om zelf al de interacties te ontwikkelen

> Gameplay zelf komt dan in gevaar

Interacties moeten logisch en vloeiend zijn

> Nefast voor de fun factor

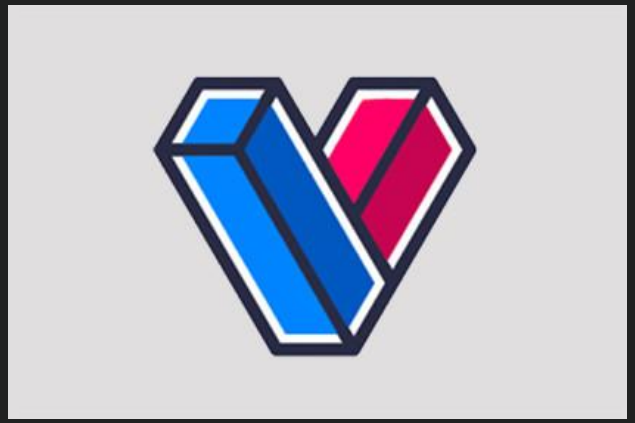
Het wiel heruitvinden is tijdverlies

All-out mayhem, explosies en humor

Solution: VR Interaction Framework

Na overleg met vakdocent

- Bevat basis interacties en extra’s
- Goede fundatie om op te bouwen
- Gegoten tot visie van mijn spel



Challenge #2: performantie

Draw calls in mijn project de FPS hog

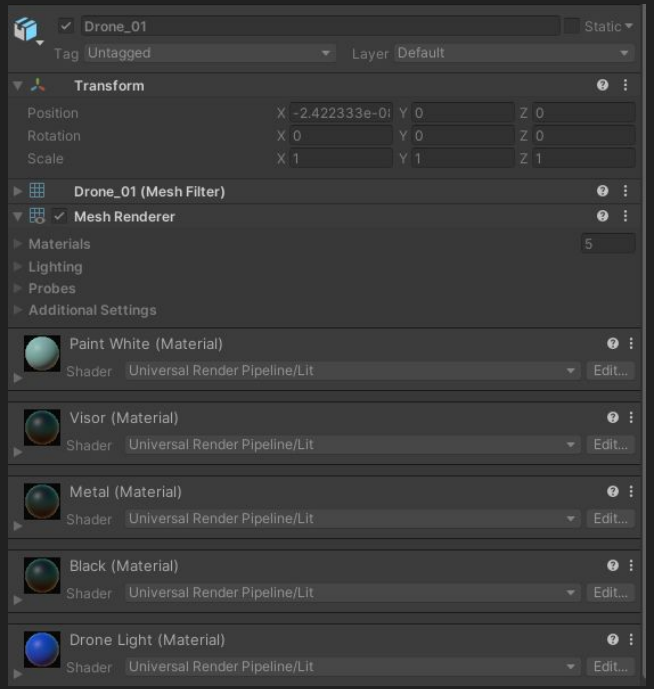
Verts, tris en vooral materials tot een minimum reduceren

Trusty ol’ Blender to the rescue

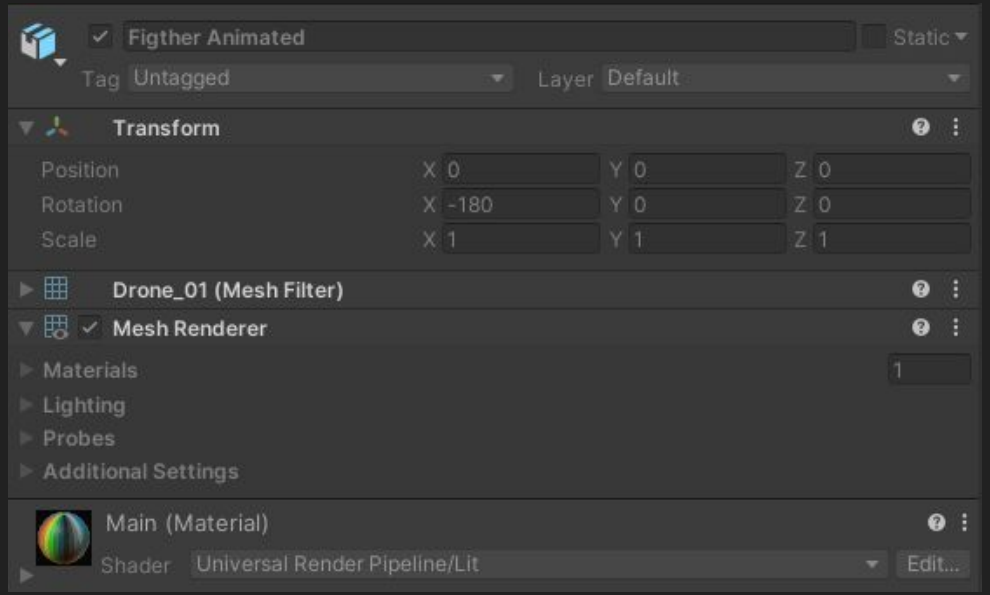
Bake them lights

Combine them meshes

Solution #1: draw calls reduceren



Voor



Na

Solution #1: draw calls reduceren

Voor

Na

381.8%

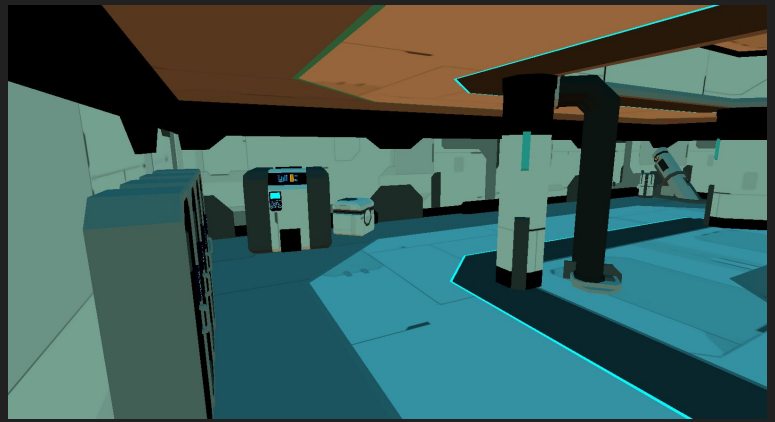
Reductie van draw calls: per drone

Solution #2: baked lighting

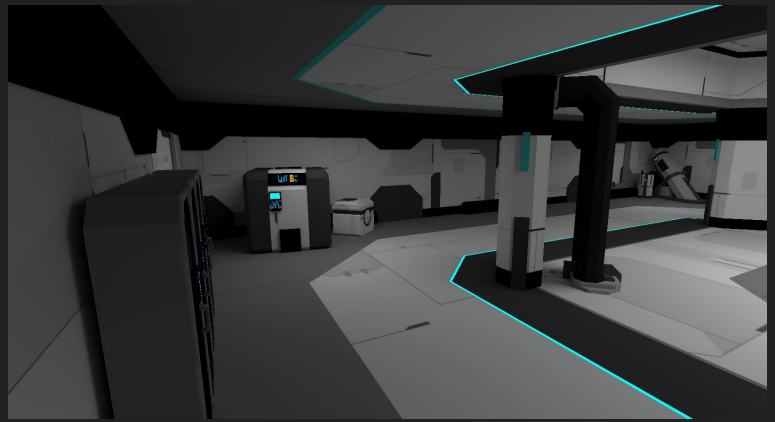
Gedaan met Bakery, Unity’s progressive niet robuust

Realtime shadows: a big no no

Zonder baked GI



Met baked GI



Other solutions

Occlusion culling: Overdraw verminderen

Mesh Combine Studio: Combineert meshes met dezelfde materials

> Bevorderd occlusion culling vanwege cells

	Batches	Vertices	Triangles
Original*	408	99190	179925
Combined*	20	99190	179925
Saved	95.1%	0.00%	0.00%
Boost	2040.0%	100.00%	100.00%
Combine Time: 60.00 ms			

2040%

Reductie van draw calls: alle statische objecten

I’m here to chew bubblegum and kick ass...
and I’m all out of bubblegum.