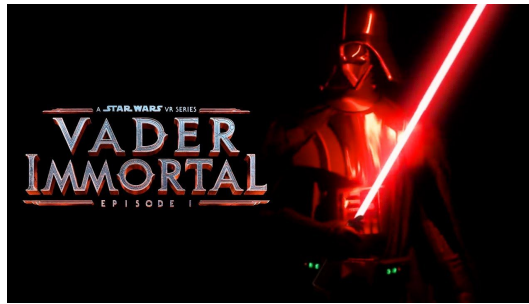


# VR Slicing Game (working title)

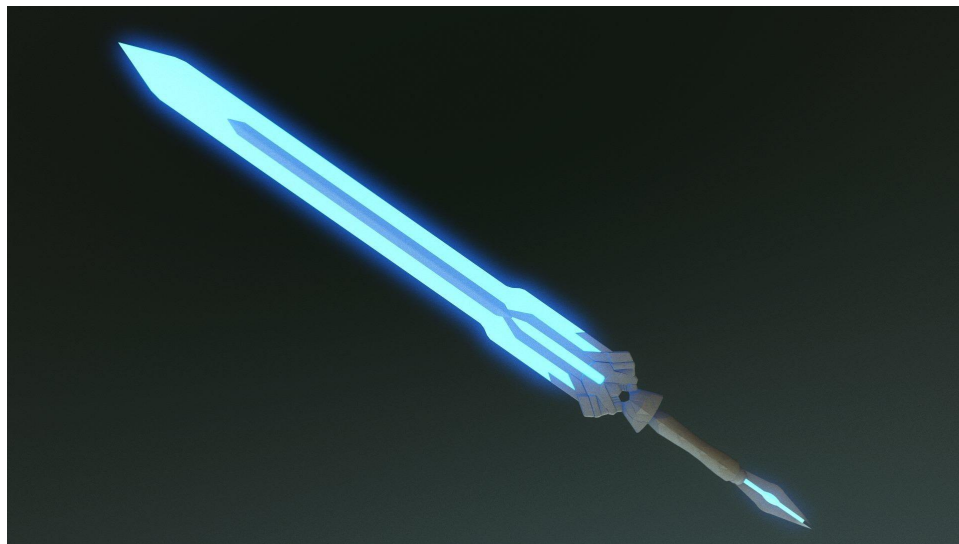
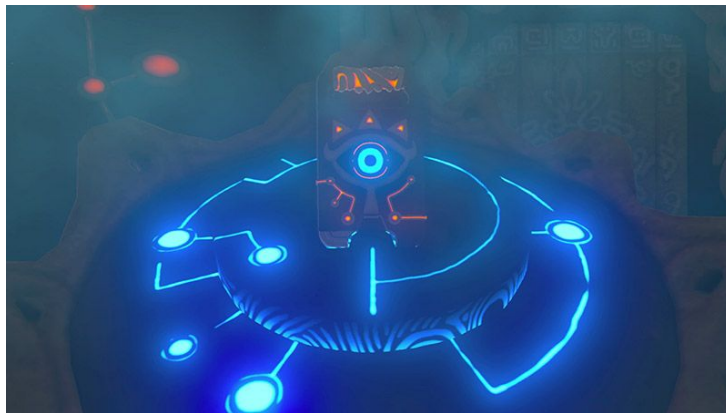
Will Carpenter

# Core Gameplay

- Virtual Reality
- Sword fighting combat against an AI opponent
- Player can slice objects and opponents into tiny chunks
- Teleportation movement to navigate a small arena environment.
- Manage health and stamina resources with collectibles



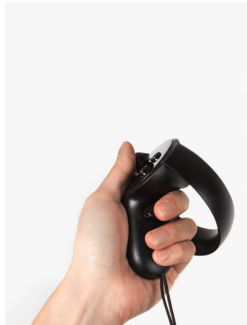
# Mood board



# Player Actions

**Teleport** - player points with the left controller at a point on the ground in the arena. Pressing the trigger button will teleport the player to that location.

**Grab** - player points left controller at a health or endurance collectible. Pressing the grab button will collect the item if within a certain range



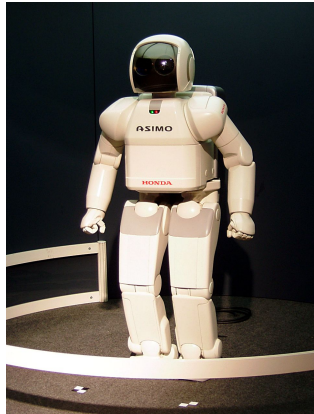
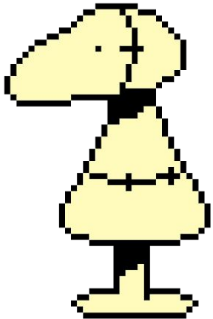
**Sword Swing** - player uses the right controller to swing their sword, only slices above a certain velocity will be accepted as hits, to help prevent cheese.

**Block** - player holds up the right controller to block an opponent's sword swing - successfully blocking an attack drains endurance. Blocking will not work when endurance runs out.



# Enemy types

- Dummy - Static, does not block attacks, small health pool
- Robot - Moves slowly, rotates blade to block attacks, does not have endurance, must juke his blocks to damage
- Cyborg - Moves quickly, also rotates blade to block attacks, very hard to juke, but has endurance and the block will break after it runs out
- Person - Nearly identical to the cyborg, but slightly weaker in every way.



# Gameplay loop

- Player starts new game or selects level from level select
- Player spawns in arena opposite one of the opponents, and is given a simple instruction to “Destroy the Opponent”
- Player engages the opponent in sword combat, using up health and endurance as it progresses
- Player can choose to disengage from combat to collect health and endurance pick-ups
- Upon defeating the opponent, enter “blade mode” and opponent becomes sliceable
- After slicing opponent to bits, level ends and player progresses to next level



# Scope

## Minimum Viable Product:

- All mechanics as described in Player Actions
- Game flow as described in Gameplay Loop
- At least one enemy type and arena stage (cyborg or human preferably)

## Stretch Goals

- All described enemy types
- Narrative
- Multiple stage environments, up to three
- Boss fight against a large opponent

# Development Challenges

- Swordplay game feel
  - BIG design challenge
  - Slicing should feel addictive
  - Fighting against an opponent should feel engaging, not robotic and cheese-able
- Opponent AI
  - BIG programming challenge
  - An AI opponent needs to be able to:
    - Follow the player around an arena
    - Make decisions about when to be offensive
      - Swing its sword at the player from multiple directions
    - Or defensive
      - Move its sword to block player attacks
- Slice a complex mesh
  - Programming Challenge
  - Right now, slicing works on convex meshes (a sphere, a cube, a pyramid) but won't work on concave meshes (a donut, a bowl)
  - So...how can a complex mesh like an opponent model be sliced?



# Proposed Timeline (basic)

**Winter Break: Dec. 13 - Jan. 7 - Sprints will be 1 week and have larger goals because of no classes**

Week of Dec 13 - 17: Finalize pre-production

- Fill design doc
- Ensure all aspects of MVP have reached Conception stage

Week of Dec 20 - 22 (Rest of week off for holiday)

- Ensure main slicing mechanic is at Alpha stage ⚠️

Week of Dec 27 - 31

- Get Opponent AI to alpha stage ⚠️

December 2021							⤴	⤵
Su	Mo	Tu	We	Th	Fr	Sa		
28	29	30	1	2	3	4		
5	6	7	8	9	10	11		
12	13	14	15	16	17	18		
19	20	21	22	23	24	25		
26	27	28	29	30	31	1		


# Proposed Timeline (cont.)

Week of Jan 3 - 7: Last Week of Winter Break

- Get player interactions with opponent to Alpha (block, hit, player Damage)

**End of Winter Break - Sprints will now be two weeks and have smaller goals**

Jan 10 - 21

- Get “Blade Mode” mechanic to Alpha 

Jan 24 - Feb 4

- Get Player Health and Endurance mechanic to Alpha (lose health on player damage, lose endurance on block, fail to block with no endurance, die with no health)

Feb 7 - 18

- Get Collectible mechanic to Alpha (health and endurance pickups, drop from boxes, restore health/endurance when grabbed by player)

**Beyond This Point - Either work on getting previous features to Beta or begin stretch goals - determine this in Finalization of Pre-Production**

January 2022



Su	Mo	Tu	We	Th	Fr	Sa
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31	1	2	3	4	5
6	7	8	9	10	11	12