

# CGUE 17 - Submission 2, Robogrip

Stephan Bauch (0508523)

Malte Fiala (0475115)

## Starting the game

robogrip.exe accepts the following start parameters configurations:

If no parameters are given it starts with default values of: 800x600, not fullscreen, framerate 60 and Y axis inverted

- int:width int:height (2 parameters)  
e.g robogrip.exe 400 500 (resolution 400x500)
- int:width int:height int:fullscreen(1|0) (3 parameters)  
e.g robogrip.exe 400 500 1 (goes fullscreen @ 400x500)
- int:width int:height int:fullscreen(1|0) int:framerate (4 parameters)  
e.g robogrip.exe 400 500 1 50.6 (goes fullscreen @ 400x500 @ 50.6 fps)
- int:width int:height int:fullscreen(1|0) int:framerate int:invertYAxis(1|0) (5 parameters)  
e.g robogrip.exe 400 500 1 50.6 1 (goes fullscreen @ 400x500 @ 50.6 fps with Y axis inverted)

## Getting through the game

Press and hold left mouse button to “attach” on a grip point and being moved forward. The grip point must be inside the crosshair and highlighted to be able to attach to it.

While attached to a grip point, the player moves like a pendulum.

## “Features” of the game

- Grip points are highlighted when they are inside the crosshair. This is achieved by switching the shader drawing the grip point. Also, a glow is applied to the grip point if highlighted.
- most effects can be toggled on/off (see controls)
- pendulum movement of player
- robot arm attaches/detaches to grip points
- sound (music, effect attach, effect detach)
- Texture Mapping
- Shadow Mapping
- Motion Blur
- Bloom/HDR
- Depth of Field
- Text Rendering
- Controls:
  - F1: show Help

- F2: show/hide FPS/frametime
- F3: show/hide Wireframing
- F4: switch Texture Sampling Quality: Nearest Neighbour, Linear
- F5: change MipMap Quality: Off, Nearest Neighbour, Linear
- F6: show Shadowmap (camera = sun)
- F7: enable/disable Bloom/HDR
- F9: enable/disable Blending
- F10: change active effect: off, Motion Blur, Depth of Field
- shift: freeze/unfreeze player movement
- backspace: restart the game

## Illuminated Objects (also textured) Textured Objects

All Objects, except the Sun Sphere and the Crosshair, are illuminated by a directional light (sun)

## Objects

All objects were created with Blender (<https://www.blender.org/>)

## External Libraries

All used libraries are in the folder "external". They are as follows:

- Assimp: <http://assimp.sourceforge.net/>
- freeImage: <http://freeimage.sourceforge.net/>
- FreeType: <https://www.freetype.org/>
- glew: <http://glew.sourceforge.net/>
- glfw: <http://www.glfw.org/>
- glm: <https://github.com/g-truc/glm>