

VoRMD

VOLUME RENDERING ON MOBILE DEVICES



Goal

Volume renderer on an Android device
OpenGL ES 2.0 VS. WebGL

Goal

Volume renderer on an Android device

OpenGL ES 2.0 VS. WebGL (Dropped)

New goal

Volume rendering program in OpenGL ES 2.0

- > Touch input
- > Different shaders
- > Slicing
- > Adaptive
- > Loading volumes/ transfer functions

Technology

HTC Desire HD – Adreno 205

Android 2.3

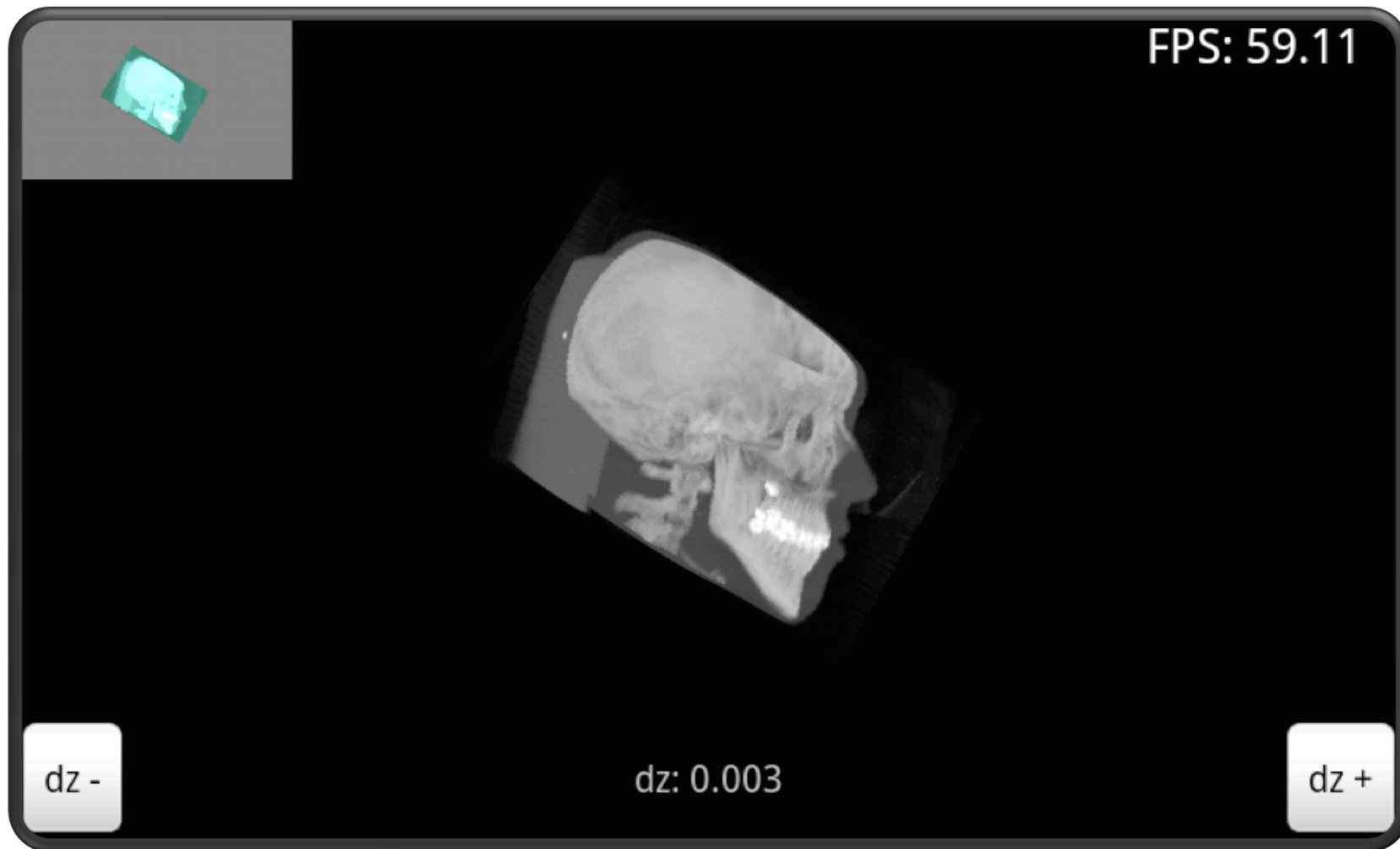
- > Android SDK – Java

- > Android NDK r6 – C++

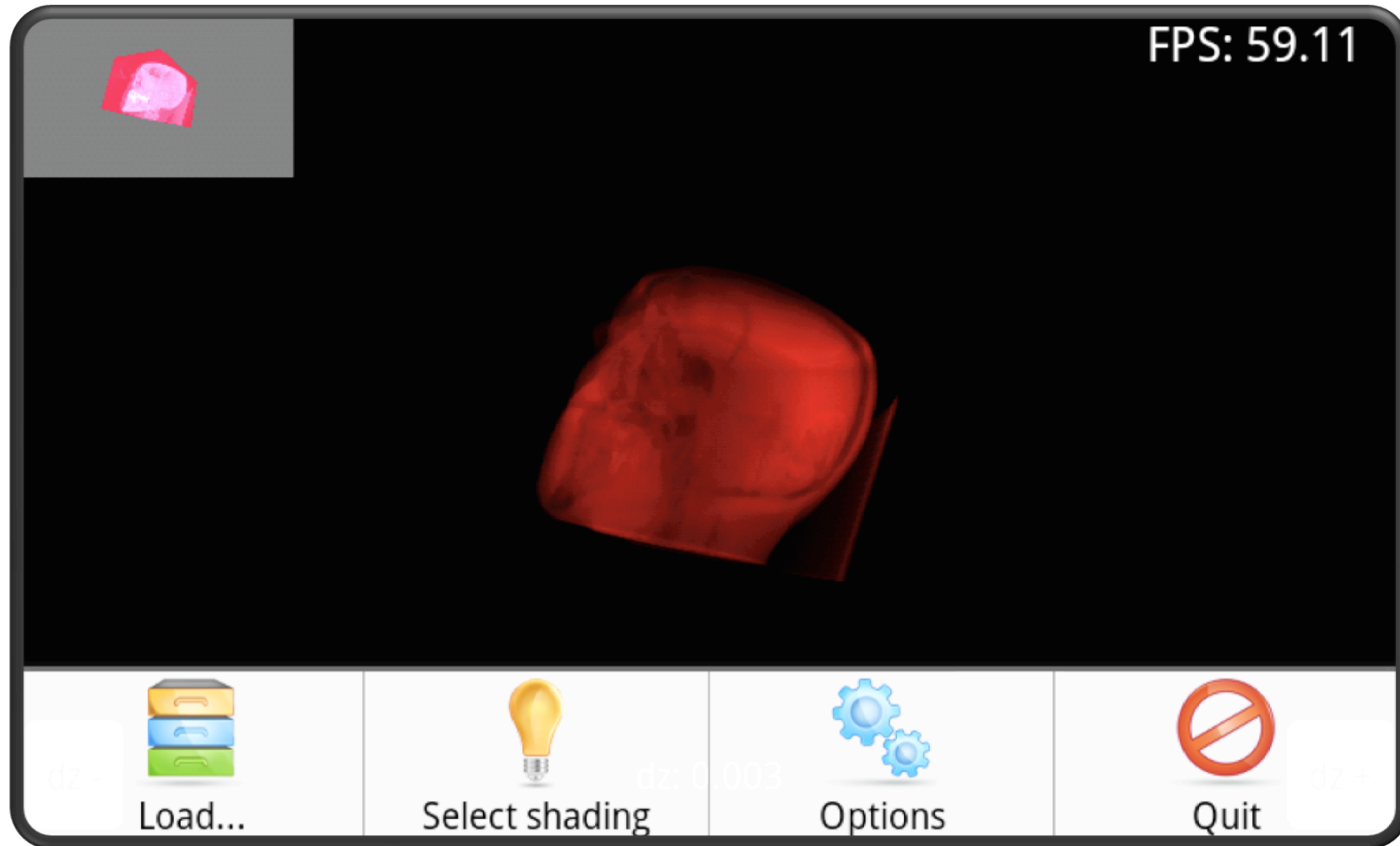
OpenGL ES 2.0

GLSL

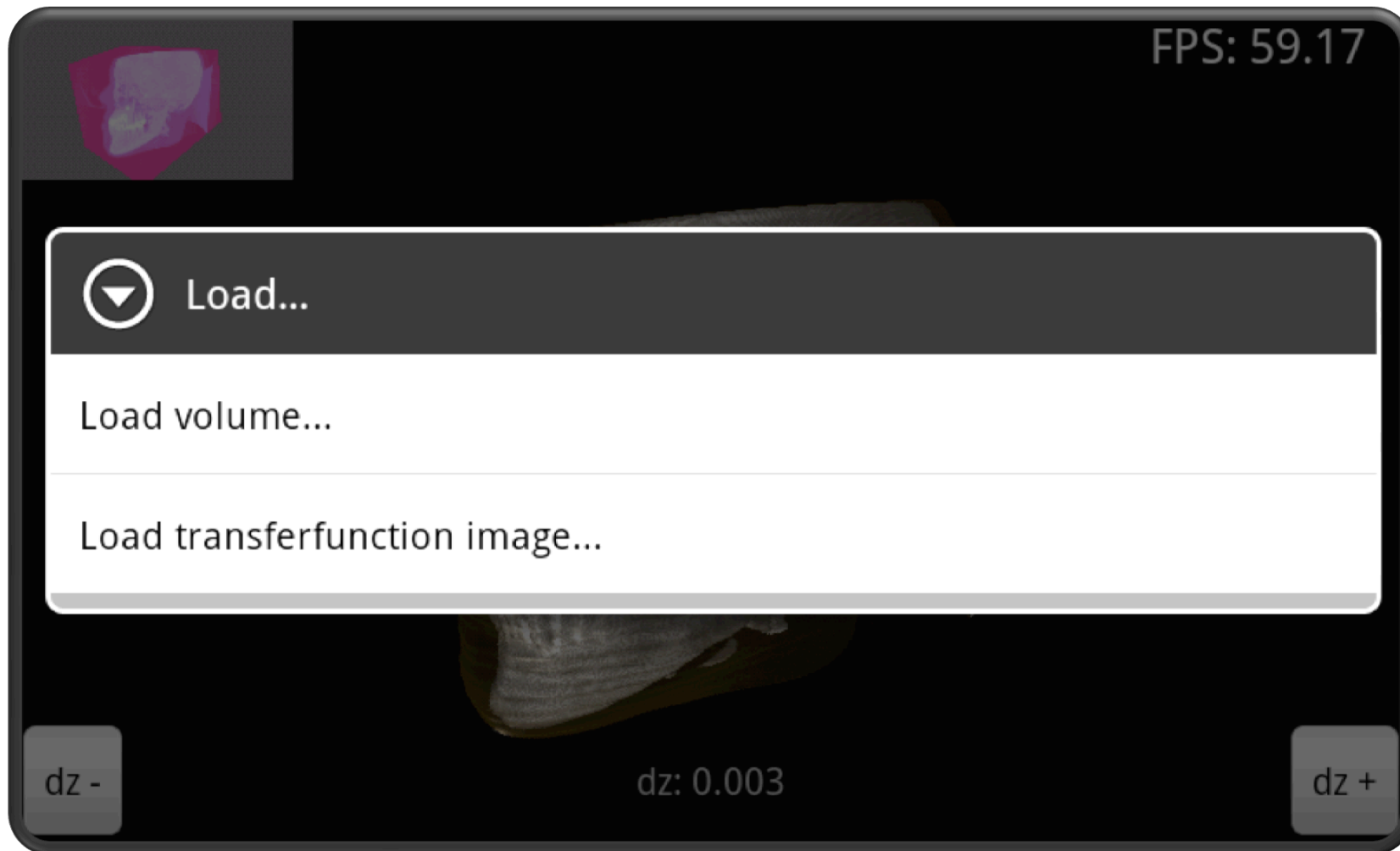
Program



Program - Menu



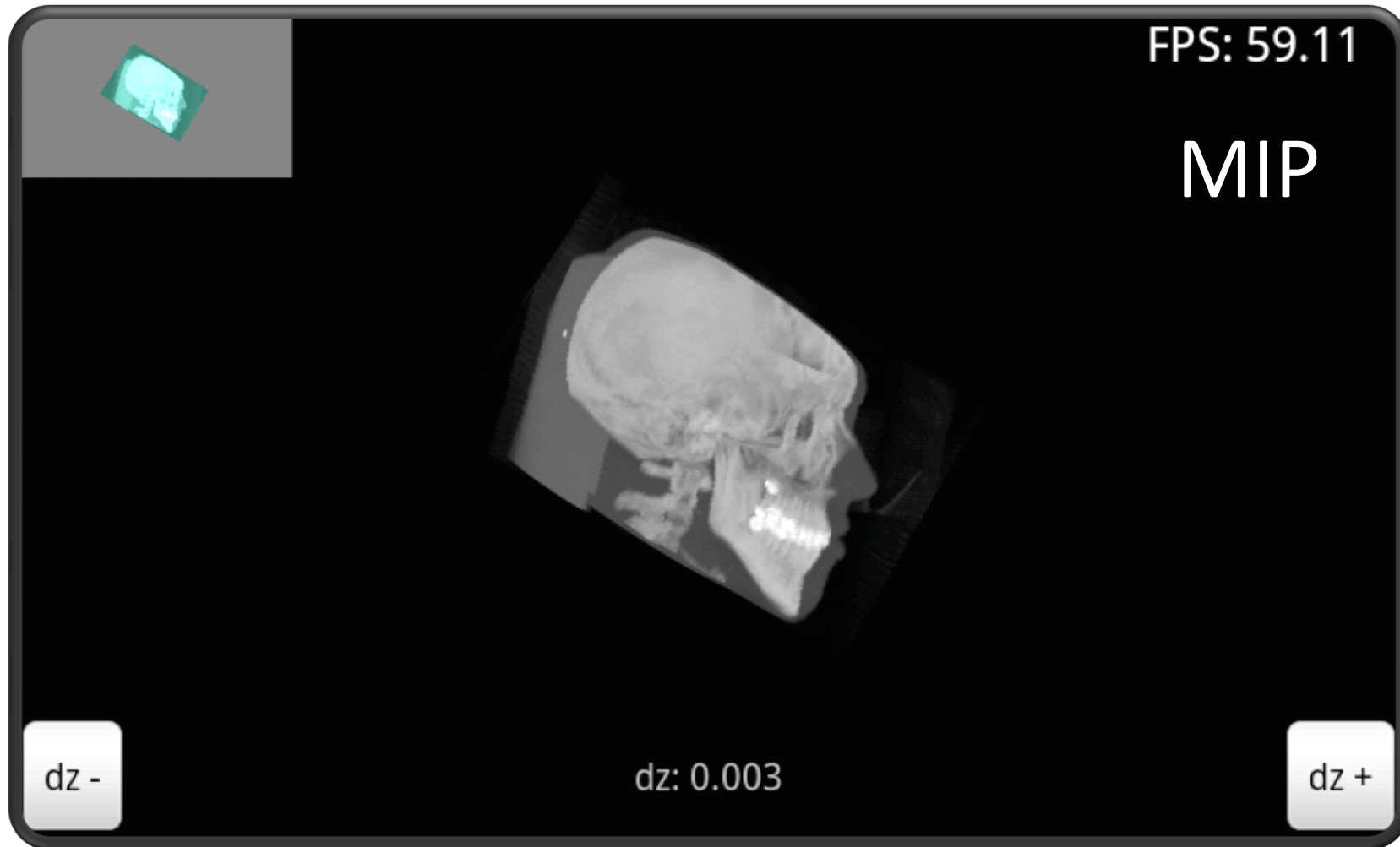
Program - Menu



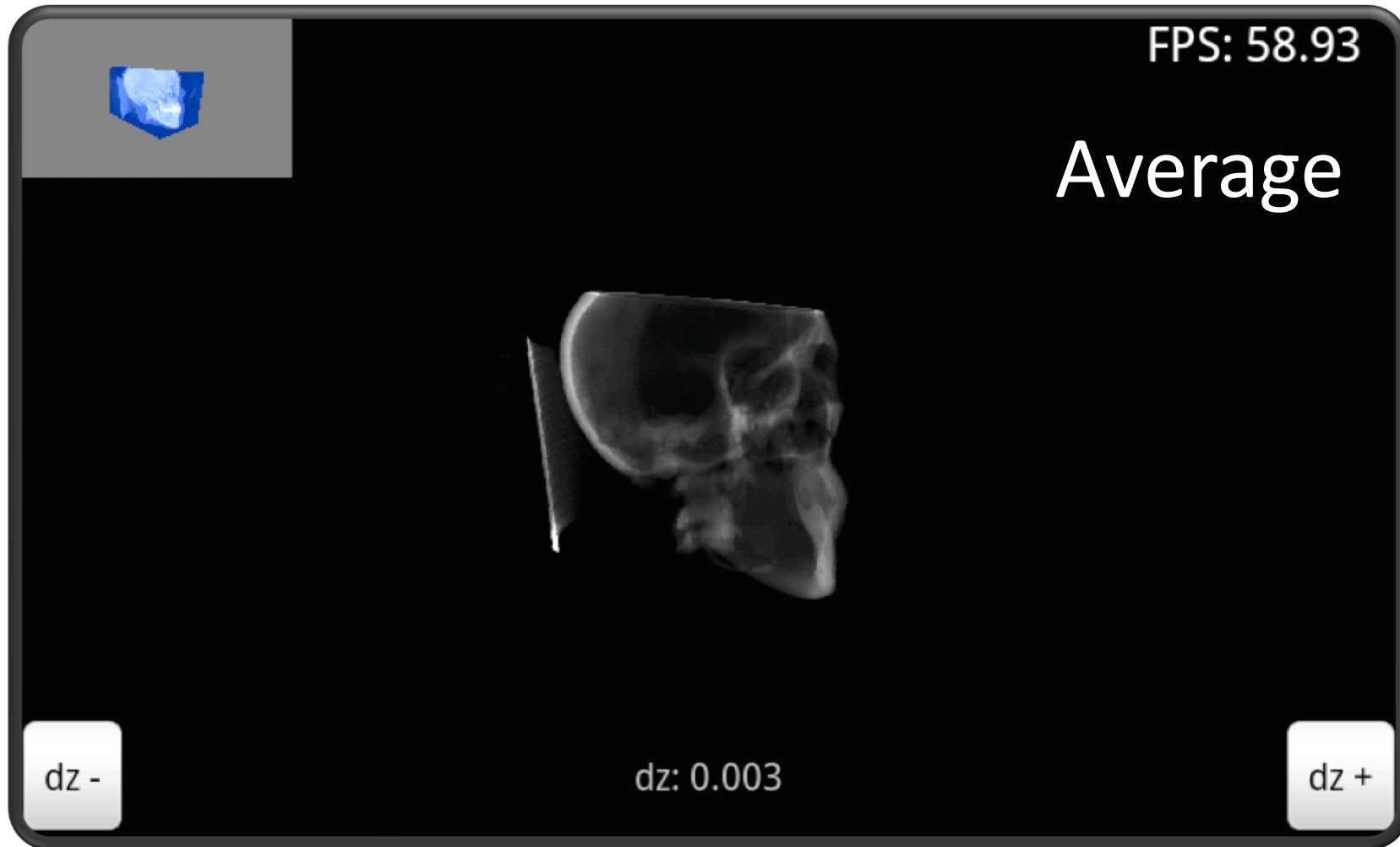
Program - Menu



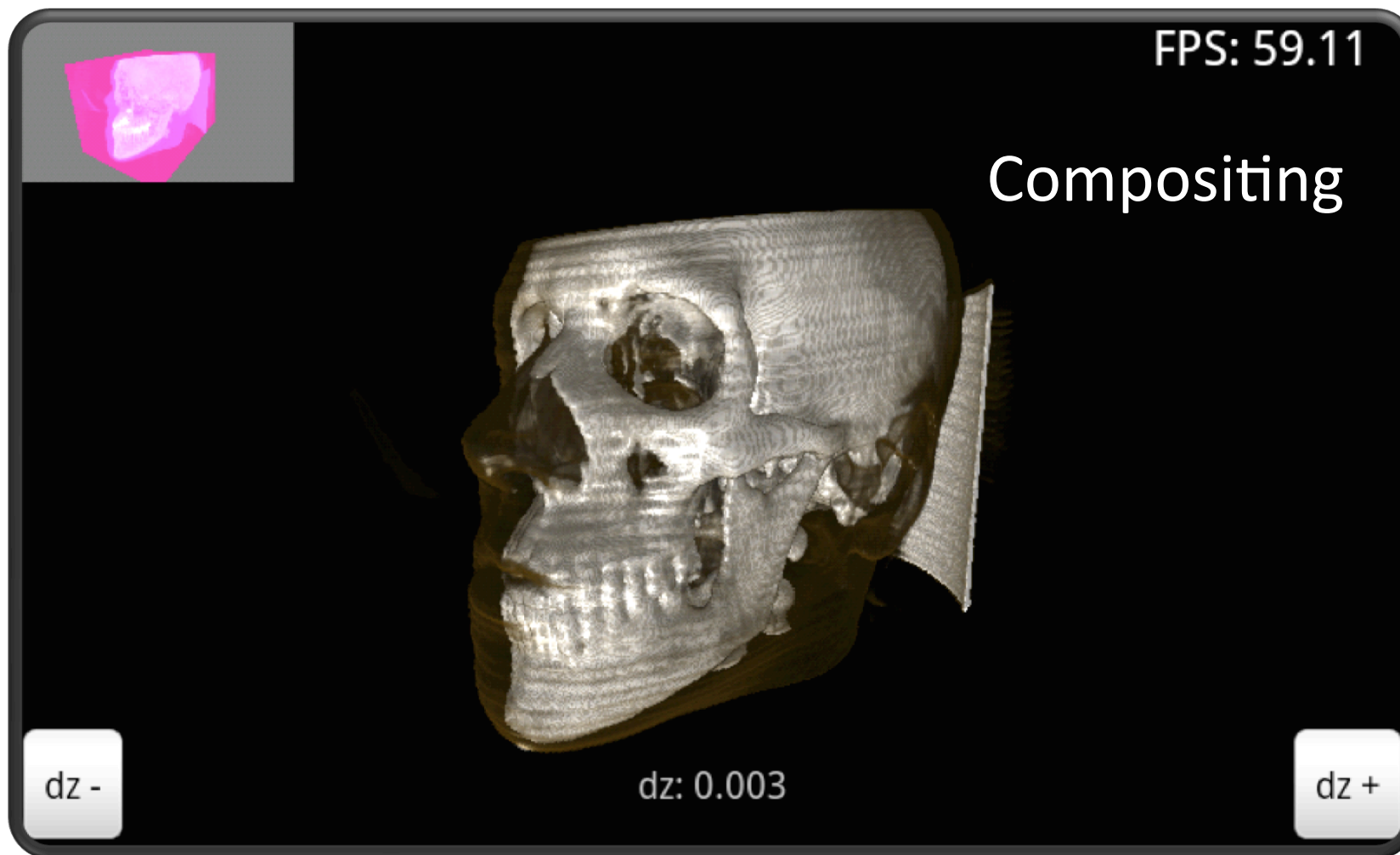
Program - Shaders



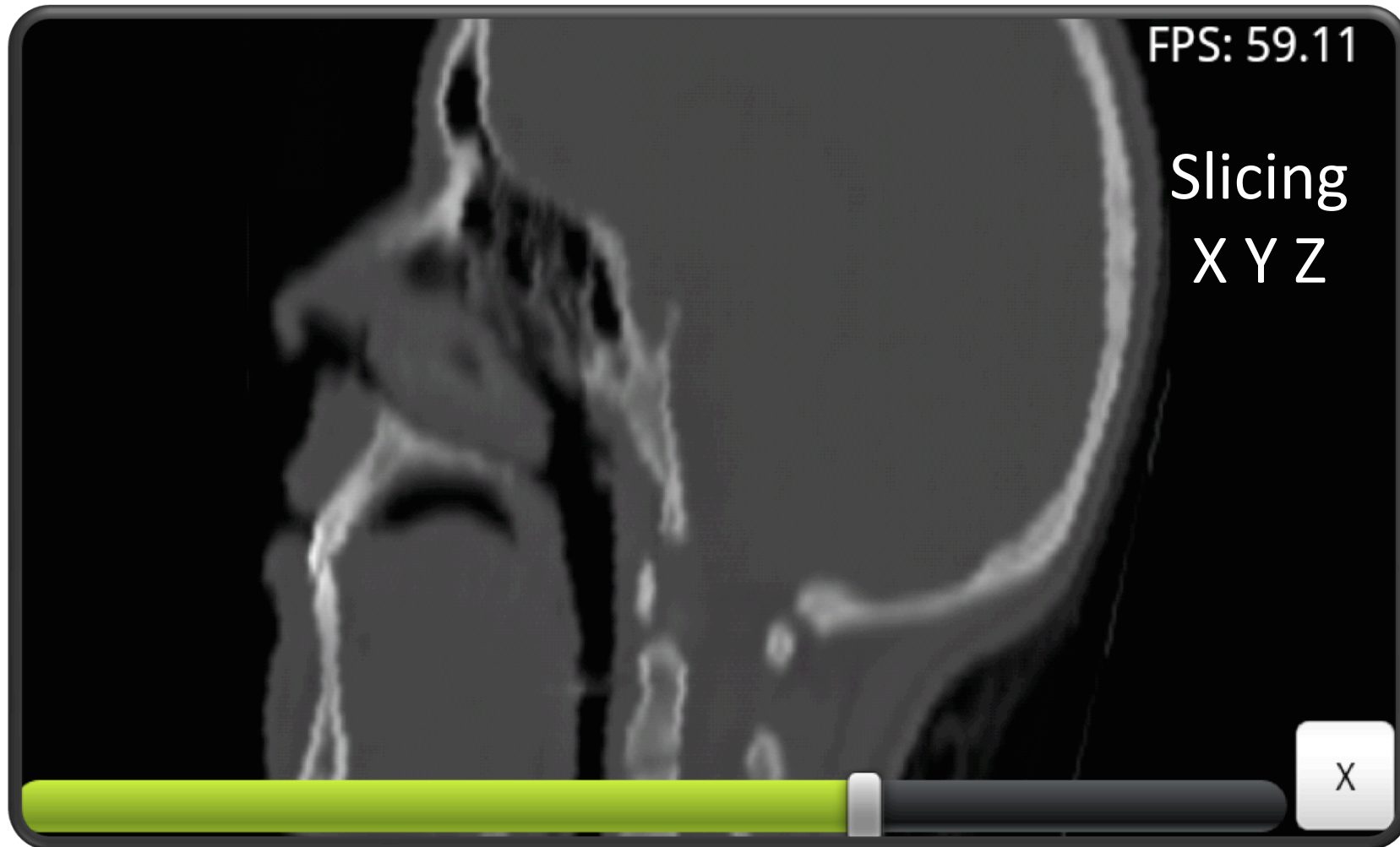
Program - Shaders



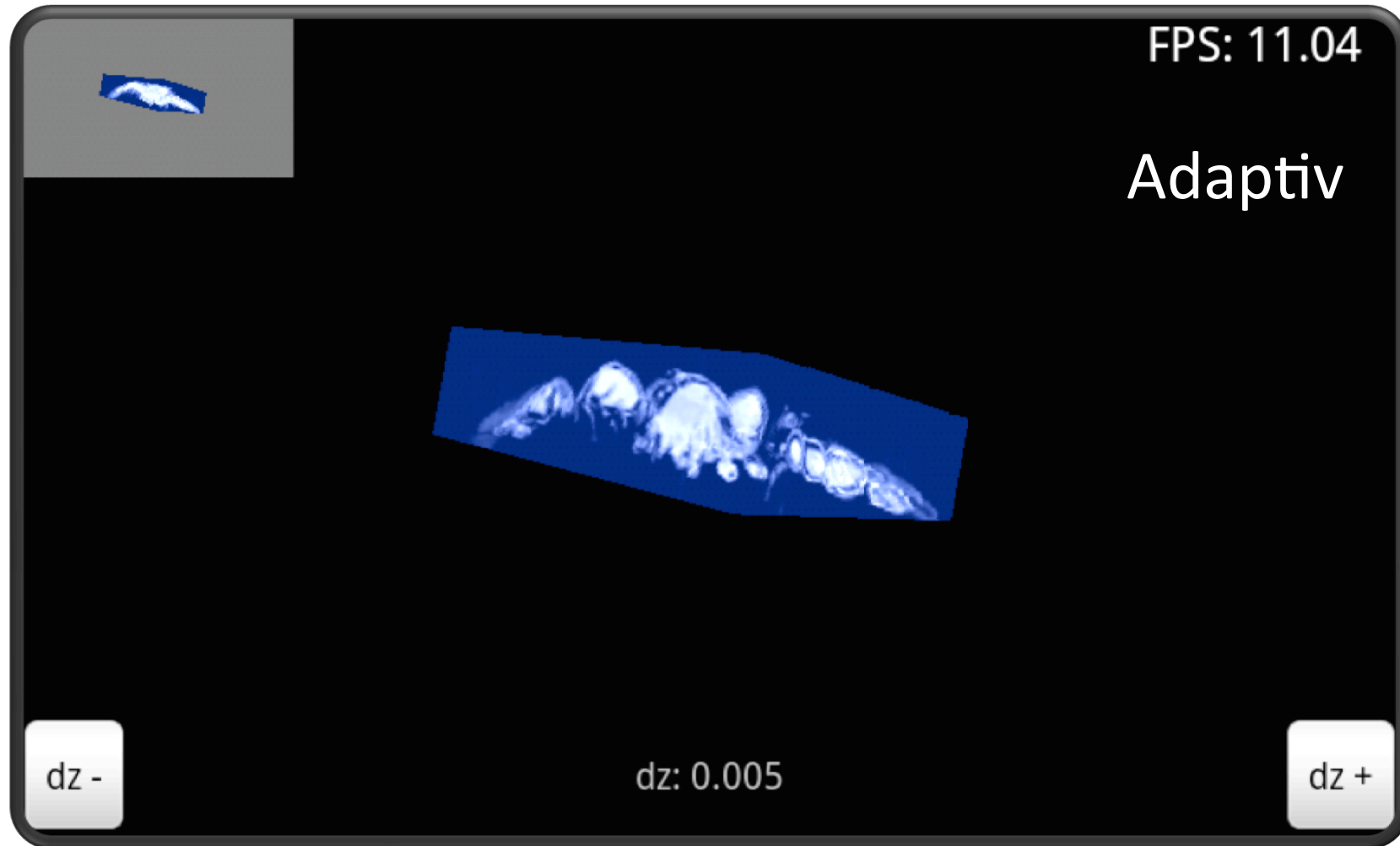
Program - Shaders



Program - Shaders



Program – Touch input



Issues

Android documentation

OpenGL extensions

- > Texture 3D
- > Power of two textures
- > GLfloat

GLSL

- > Iterations in loops

Issues

Android documentation

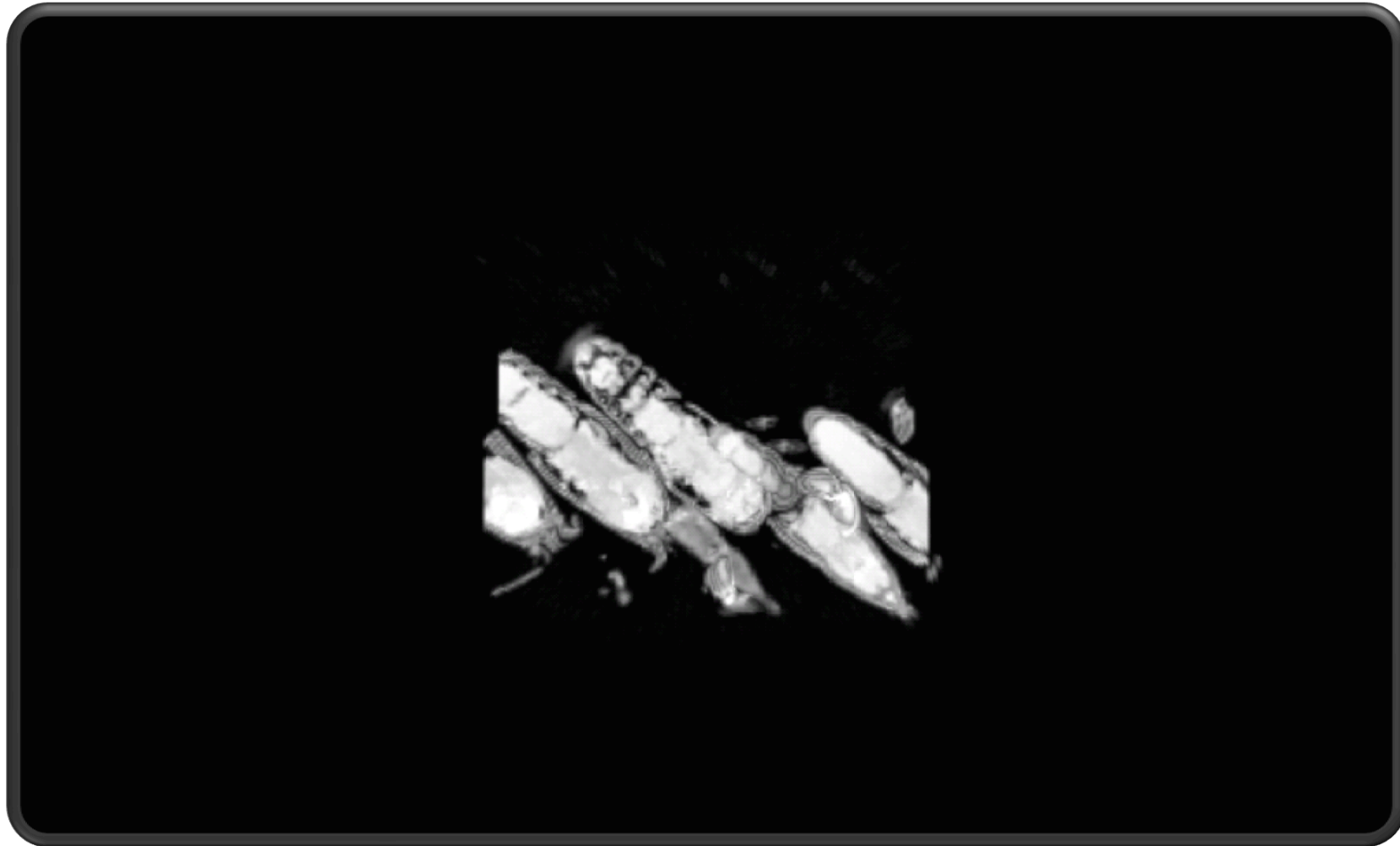
OpenGL extensions

- > Texture 3D
- > Power of two textures
- > GLfloat

GLSL

- > Iterations in loops

Power of two textures/ tex coordinates



Issues

Android documentation

OpenGL extensions

- > Texture 3D
- > Power of two textures
- > Gfloat

GLSL

- > Iterations in loops

Iterations in loops



Outlook

Avoid Java

Interactive transfer function

Improved use of the touch input

Conclusion

Volume rendering

- possible on today's devices
- further improvements with better hardware

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