

```
jz@jz light-field-renderer % mkdir build
jz@jz light-field-renderer % cd build
jz@jz build % cmake
Usage
```

```
cmake [options] <path-to-source>
cmake [options] <path-to-existing-build>
cmake [options] -S <path-to-source> -B <path-to-build>
```

Specify a source directory to (re-)generate a build system for it in the current working directory. Specify an existing build directory to re-generate its build system.

Run 'cmake --help' for more information.

```
jz@jz build % cmake ..
-- The C compiler identification is AppleClang 12.0.5.12050022
-- The CXX compiler identification is AppleClang 12.0.5.12050022
-- Detecting C compiler ABI info
-- Detecting C compiler ABI info - done
-- Check for working C compiler: /Applications/Xcode.app/Contents/Developer/Toolchains/XcodeDefault.xctoolchain/usr/bin/cc - skipped
-- Detecting C compile features
-- Detecting C compile features - done
-- Detecting CXX compiler ABI info
-- Detecting CXX compiler ABI info - done
-- Check for working CXX compiler: /Applications/Xcode.app/Contents/Developer/Toolchains/XcodeDefault.xctoolchain/usr/bin/c++ - skipped
-- Detecting CXX compile features
-- Detecting CXX compile features - done
-- Performing Test COMPILER_SUPPORTS_03
-- Performing Test COMPILER_SUPPORTS_03 - Success
-- Performing Test COMPILER_SUPPORTS_G
-- Performing Test COMPILER_SUPPORTS_G - Success
-- NanoGUI: using Metal backend.
-- NanoGUI: building static library.
-- NanoGUI: using libc++.
-- Using Cocoa for window creation
-- NanoGUI: not building the Python plugin.
-- Configuring done
-- Generating done
-- Build files have been written to: /Users/jz/Desktop/light-field-renderer/build
jz@jz build % make
```

#### Scanning dependencies of target glfw\_objects

```
[ 1%] Building C object lib/nanogui/ext/glfw/src/CMakeFiles/glfw_objects.dir/context.c.o
[ 2%] Building C object lib/nanogui/ext/glfw/src/CMakeFiles/glfw_objects.dir/init.c.o
[ 4%] Building C object lib/nanogui/ext/glfw/src/CMakeFiles/glfw_objects.dir/input.c.o
[ 5%] Building C object lib/nanogui/ext/glfw/src/CMakeFiles/glfw_objects.dir/monitor.c.o
[ 7%] Building C object lib/nanogui/ext/glfw/src/CMakeFiles/glfw_objects.dir/vulkan.c.o
[ 8%] Building C object lib/nanogui/ext/glfw/src/CMakeFiles/glfw_objects.dir/window.c.o
[10%] Building C object lib/nanogui/ext/glfw/src/CMakeFiles/glfw_objects.dir/cocoa_init.m.o
[11%] Building C object lib/nanogui/ext/glfw/src/CMakeFiles/glfw_objects.dir/cocoa_joystick.m.o
[13%] Building C object lib/nanogui/ext/glfw/src/CMakeFiles/glfw_objects.dir/cocoa_monitor.m.o
[14%] Building C object lib/nanogui/ext/glfw/src/CMakeFiles/glfw_objects.dir/cocoa_window.m.o
[16%] Building C object lib/nanogui/ext/glfw/src/CMakeFiles/glfw_objects.dir/cocoa_time.c.o
[17%] Building C object lib/nanogui/ext/glfw/src/CMakeFiles/glfw_objects.dir/posix_thread.c.o
[19%] Building C object lib/nanogui/ext/glfw/src/CMakeFiles/glfw_objects.dir/nsgl_context.m.o
[20%] Building C object lib/nanogui/ext/glfw/src/CMakeFiles/glfw_objects.dir/egl_context.c.o
[22%] Building C object lib/nanogui/ext/glfw/src/CMakeFiles/glfw_objects.dir/osmesa_context.c.o
[22%] Built target glfw_objects
[23%] Generating resources/imageview_vertex.metallib
[25%] Generating resources/imageview_fragment.metallib
[26%] Running bin2c
```

#### Scanning dependencies of target nanogui

```
[28%] Building C object lib/nanogui/CMakeFiles/nanogui.dir/ext/nanovg/src/nanovg.c.o
[29%] Building C object lib/nanogui/CMakeFiles/nanogui.dir/ext/nanovg_metal/src/nanovg_mtl.m.o
[31%] Building CXX object lib/nanogui/CMakeFiles/nanogui.dir/src/texture_metal.mm.o
[32%] Building CXX object lib/nanogui/CMakeFiles/nanogui.dir/src/shader_metal.mm.o
[34%] Building CXX object lib/nanogui/CMakeFiles/nanogui.dir/src/renderpass_metal.mm.o
[35%] Building CXX object lib/nanogui/CMakeFiles/nanogui.dir/src/darwin.mm.o
[37%] Building CXX object lib/nanogui/CMakeFiles/nanogui.dir/nanogui_resources.cpp.o
[38%] Building CXX object lib/nanogui/CMakeFiles/nanogui.dir/src/common.cpp.o
[40%] Building CXX object lib/nanogui/CMakeFiles/nanogui.dir/src/widget.cpp.o
[41%] Building CXX object lib/nanogui/CMakeFiles/nanogui.dir/src/theme.cpp.o
[43%] Building CXX object lib/nanogui/CMakeFiles/nanogui.dir/src/layout.cpp.o
[44%] Building CXX object lib/nanogui/CMakeFiles/nanogui.dir/src/screen.cpp.o
[46%] Building CXX object lib/nanogui/CMakeFiles/nanogui.dir/src/label.cpp.o
[47%] Building CXX object lib/nanogui/CMakeFiles/nanogui.dir/src/window.cpp.o
[49%] Building CXX object lib/nanogui/CMakeFiles/nanogui.dir/src/popup.cpp.o
[50%] Building CXX object lib/nanogui/CMakeFiles/nanogui.dir/src/checkbox.cpp.o
[52%] Building CXX object lib/nanogui/CMakeFiles/nanogui.dir/src/button.cpp.o
[53%] Building CXX object lib/nanogui/CMakeFiles/nanogui.dir/src/popupbutton.cpp.o
[55%] Building CXX object lib/nanogui/CMakeFiles/nanogui.dir/src/combobox.cpp.o
[56%] Building CXX object lib/nanogui/CMakeFiles/nanogui.dir/src/progressbar.cpp.o
[58%] Building CXX object lib/nanogui/CMakeFiles/nanogui.dir/src/slider.cpp.o
[59%] Building CXX object lib/nanogui/CMakeFiles/nanogui.dir/src/messagedialog.cpp.o
[61%] Building CXX object lib/nanogui/CMakeFiles/nanogui.dir/src/textbox.cpp.o
[62%] Building CXX object lib/nanogui/CMakeFiles/nanogui.dir/src/textarea.cpp.o
[64%] Building CXX object lib/nanogui/CMakeFiles/nanogui.dir/src/imagepanel.cpp.o
[65%] Building CXX object lib/nanogui/CMakeFiles/nanogui.dir/src/vscrollpanel.cpp.o
[67%] Building CXX object lib/nanogui/CMakeFiles/nanogui.dir/src/colorwheel.cpp.o
[68%] Building CXX object lib/nanogui/CMakeFiles/nanogui.dir/src/colorpicker.cpp.o
[70%] Building CXX object lib/nanogui/CMakeFiles/nanogui.dir/src/graph.cpp.o
[71%] Building CXX object lib/nanogui/CMakeFiles/nanogui.dir/src/tabwidget.cpp.o
[73%] Building CXX object lib/nanogui/CMakeFiles/nanogui.dir/src/canvas.cpp.o
[74%] Building CXX object lib/nanogui/CMakeFiles/nanogui.dir/src/texture.cpp.o
```

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[ 76%] Building CXX object lib/nanogui/CMakeFiles/nanogui.dir/src/shader.cpp.o
[ 77%] Building CXX object lib/nanogui/CMakeFiles/nanogui.dir/src/imageview.cpp.o
[ 79%] Building CXX object lib/nanogui/CMakeFiles/nanogui.dir/src/traits.cpp.o
[ 80%] Linking CXX static library libnanogui.a
[ 80%] Built target nanogui
Scanning dependencies of target light-field-renderer
[ 82%] Building CXX object CMakeFiles/light-field-renderer.dir/source/core/application.cpp.o
/Users/jz/Desktop/light-field-renderer/source/core/application.cpp:237:94: warning: illegal character encoding in string literal [-Winvalid-source-encoding]
    float_box_rows.push_back(PropertyBoxRow(window, { &cfg->yaw, &cfg->pitch }, "Rotation", "███", 1, 1.0f));
                                                                    ^~~~~
1 warning generated.
[ 83%] Building CXX object CMakeFiles/light-field-renderer.dir/source/core/camera-array.cpp.o
/Users/jz/Desktop/light-field-renderer/source/core/camera-array.cpp:107:32: error: use of undeclared identifier 'GL_RG'
    case 2: pixel_format = GL_RG; break;
                               ^
/Users/jz/Desktop/light-field-renderer/source/core/camera-array.cpp:123:9: warning: 'glGenTextures' is deprecated: first deprecated in macOS 10.14 - OpenGL API deprecated. (Define GL_SILENCE_DEPRECATED to silence these warnings) [-Wdeprecated-declarations]
    glGenTextures(1, &dc.texture);
    ^
/Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX11.3.sdk/System/Library/Frameworks/OpenGL.framework/Headers/gl.h:2498:13: note: 'glGenTextures' has been explicitly marked deprecated here
extern void glGenTextures (GLsizei n, GLuint *textures) OPENGL_DEPRECATED(10.0, 10.14);
    ^
/Users/jz/Desktop/light-field-renderer/source/core/camera-array.cpp:124:9: warning: 'glBindTexture' is deprecated: first deprecated in macOS 10.14 - OpenGL API deprecated. (Define GL_SILENCE_DEPRECATED to silence these warnings) [-Wdeprecated-declarations]
    glBindTexture(GL_TEXTURE_2D, dc.texture);
    ^
/Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX11.3.sdk/System/Library/Frameworks/OpenGL.framework/Headers/gl.h:2386:13: note: 'glBindTexture' has been explicitly marked deprecated here
extern void glBindTexture (GLenum target, GLuint texture) OPENGL_DEPRECATED(10.0, 10.14);
    ^
/Users/jz/Desktop/light-field-renderer/source/core/camera-array.cpp:125:9: warning: 'glTexImage2D' is deprecated: first deprecated in macOS 10.14 - OpenGL API deprecated. (Define GL_SILENCE_DEPRECATED to silence these warnings) [-Wdeprecated-declarations]
    glTexImage2D(GL_TEXTURE_2D, 0, pixel_format, width, height, 0, pixel_format, GL_UNSIGNED_BYTE, image_data);
    ^
/Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX11.3.sdk/System/Library/Frameworks/OpenGL.framework/Headers/gl.h:2719:13: note: 'glTexImage2D' has been explicitly marked deprecated here
extern void glTexImage2D (GLenum target, GLint level, GLint internalformat, GLsizei width, GLsizei height, GLint border, GLenum format, GLenum type, const GLvoid *pixels) OPENGL_DEPRECATED(10.0, 10.14);
    ^
/Users/jz/Desktop/light-field-renderer/source/core/camera-array.cpp:126:9: error: use of undeclared identifier 'glGenerateMipmap'
    glGenerateMipmap(GL_TEXTURE_2D);
    ^
/Users/jz/Desktop/light-field-renderer/source/core/camera-array.cpp:128:9: warning: 'glTexParameterI' is deprecated: first deprecated in macOS 10.14 - OpenGL API deprecated. (Define GL_SILENCE_DEPRECATED to silence these warnings) [-Wdeprecated-declarations]
    glTexParameterI(GL_TEXTURE_2D, GL_TEXTURE_MIN_FILTER, GL_LINEAR);
    ^
/Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX11.3.sdk/System/Library/Frameworks/OpenGL.framework/Headers/gl.h:2723:13: note: 'glTexParameterI' has been explicitly marked deprecated here
extern void glTexParameterI (GLenum target, GLenum pname, GLint param) OPENGL_DEPRECATED(10.0, 10.14);
    ^
/Users/jz/Desktop/light-field-renderer/source/core/camera-array.cpp:129:9: warning: 'glTexParameterI' is deprecated: first deprecated in macOS 10.14 - OpenGL API deprecated. (Define GL_SILENCE_DEPRECATED to silence these warnings) [-Wdeprecated-declarations]
    glTexParameterI(GL_TEXTURE_2D, GL_TEXTURE_MAG_FILTER, GL_LINEAR);
    ^
/Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX11.3.sdk/System/Library/Frameworks/OpenGL.framework/Headers/gl.h:2723:13: note: 'glTexParameterI' has been explicitly marked deprecated here
extern void glTexParameterI (GLenum target, GLenum pname, GLint param) OPENGL_DEPRECATED(10.0, 10.14);
    ^
/Users/jz/Desktop/light-field-renderer/source/core/camera-array.cpp:130:9: warning: 'glTexParameterI' is deprecated: first deprecated in macOS 10.14 - OpenGL API deprecated. (Define GL_SILENCE_DEPRECATED to silence these warnings) [-Wdeprecated-declarations]
    glTexParameterI(GL_TEXTURE_2D, GL_TEXTURE_WRAP_S, GL_REPEAT);
    ^
/Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX11.3.sdk/System/Library/Frameworks/OpenGL.framework/Headers/gl.h:2723:13: note: 'glTexParameterI' has been explicitly marked deprecated here
extern void glTexParameterI (GLenum target, GLenum pname, GLint param) OPENGL_DEPRECATED(10.0, 10.14);
    ^
/Users/jz/Desktop/light-field-renderer/source/core/camera-array.cpp:131:9: warning: 'glTexParameterI' is deprecated: first deprecated in macOS 10.14 - OpenGL API deprecated. (Define GL_SILENCE_DEPRECATED to silence these warnings) [-Wdeprecated-declarations]
    glTexParameterI(GL_TEXTURE_2D, GL_TEXTURE_WRAP_T, GL_REPEAT);
    ^
/Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX11.3.sdk/System/Library/Frameworks/OpenGL.framework/Headers/gl.h:2723:13: note: 'glTexParameterI' has been explicitly marked deprecated here
extern void glTexParameterI (GLenum target, GLenum pname, GLint param) OPENGL_DEPRECATED(10.0, 10.14);
    ^
/Users/jz/Desktop/light-field-renderer/source/core/camera-array.cpp:197:9: warning: 'glDeleteTextures' is deprecated: first deprecated in macOS 10.14 - OpenGL API deprecated. (Define GL_SILENCE_DEPRECATED to silence these warnings) [-Wdeprecated-declarations]
    glDeleteTextures(1, &c.texture);
    ^
/Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX11.3.sdk/System/Library/Frameworks/OpenGL.framework/Headers/gl.h:2458:13: note: 'glDeleteTextures' has been explicitly marked deprecated here
extern void glDeleteTextures (GLsizei n, const GLuint *textures) OPENGL_DEPRECATED(10.0, 10.14);
    ^
/Users/jz/Desktop/light-field-renderer/source/core/camera-array.cpp:204:5: warning: 'glBindTexture' is deprecated: first deprecated in macOS 10.14 - OpenGL API deprecated. (Define GL_SILENCE_DEPRECATED to silence these warnings) [-Wdeprecated-declarations]
    glBindTexture(GL_TEXTURE_2D, c.texture);
    ^
/Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX11.3.sdk/System/Library/Frameworks/OpenGL.framework/Headers/gl.h:2386:13: note: 'glBindTexture' has been explicitly marked deprecated here
extern void glBindTexture (GLenum target, GLuint texture) OPENGL_DEPRECATED(10.0, 10.14);
    ^
/Users/jz/Desktop/light-field-renderer/source/core/camera-array.cpp:205:5: warning: 'glUniform2fv' is deprecated: first deprecated in macOS 10.14 - OpenGL API deprecated. (Define GL_SILENCE_DEPRECATED to silence these warnings) [-Wdeprecated-declarations]

```

```
    glUniform2fv(eye_loc, 1, &c.xy[0]);
    ^
/Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX11.3.sdk/System/Library/Frameworks/OpenGL.framework/H
eaders/gl.h:2943:13: note: 'glUniform2fv' has been explicitly marked deprecated here
extern void glUniform2fv (GLint location, GLsizei count, const GLfloat *value) OPENGL_DEPRECATED(10.0, 10.14);
    ^
/Users/jz/Desktop/light-field-renderer/source/core/camera-array.cpp:211:9: warning: 'glUniform2fv' is deprecated: first deprecated in macOS 10.
14 - OpenGL API deprecated. (Define GL_SILENCE_DEPRECATED to silence these warnings) [-Wdeprecated-declarations]
    glUniform2fv(st_size_loc, 1, &st_size[0]);
    ^
/Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX11.3.sdk/System/Library/Frameworks/OpenGL.framework/H
eaders/gl.h:2943:13: note: 'glUniform2fv' has been explicitly marked deprecated here
extern void glUniform2fv (GLint location, GLsizei count, const GLfloat *value) OPENGL_DEPRECATED(10.0, 10.14);
    ^
/Users/jz/Desktop/light-field-renderer/source/core/camera-array.cpp:212:9: warning: 'glUniform1f' is deprecated: first deprecated in macOS 10.1
4 - OpenGL API deprecated. (Define GL_SILENCE_DEPRECATED to silence these warnings) [-Wdeprecated-declarations]
    glUniform1f(st_distance_loc, st_distance);
    ^
/Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX11.3.sdk/System/Library/Frameworks/OpenGL.framework/H
eaders/gl.h:2934:13: note: 'glUniform1f' has been explicitly marked deprecated here
extern void glUniform1f (GLint location, GLfloat v0) OPENGL_DEPRECATED(10.0, 10.14);
    ^
/Users/jz/Desktop/light-field-renderer/source/core/camera-array.cpp:216:9: warning: 'glUniformMatrix4fv' is deprecated: first deprecated in mac
OS 10.14 - OpenGL API deprecated. (Define GL_SILENCE_DEPRECATED to silence these warnings) [-Wdeprecated-declarations]
    glUniformMatrix4fv(VP_loc, 1, GL_FALSE, &c.VP[0][0]);
    ^
/Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX11.3.sdk/System/Library/Frameworks/OpenGL.framework/H
eaders/gl.h:2952:13: note: 'glUniformMatrix4fv' has been explicitly marked deprecated here
extern void glUniformMatrix4fv (GLint location, GLsizei count, GLboolean transpose, const GLfloat *value) OPENGL_DEPRECATED(10.0, 10.14);
    ^
13 warnings and 2 errors generated.
make[2]: *** [CMakeFiles/light-field-renderer.dir/source/core/camera-array.cpp.o] Error 1
make[1]: *** [CMakeFiles/light-field-renderer.dir/all] Error 2
make: *** [all] Error 2
jz@jz build %
```