OpenGL Shading Language

- Imperative, “C-like” programming language
- Shaders are programs that run in parallel on the GPU
  - GeForce Titan V: 5120 cores
- Start in `main() { ... }`
- We do not have:
  - No pointer chasing, pointer arithmetic (`*(p + 2)`) (sort-of)
  - No dynamic arrays (no memory allocation on a heap)
  - Automatic type conversion (in general)
- We do have:
  - Additional in-built types for managing vectors, matrices, textures, ...
  - Speed

New Data Types - Vectors

- `{ε b d i u}vec{2 3 4}`
- ‘**b**ool’ ‘**d**ouble’ ‘**i**nteger’ ‘**u**nsigned integer’
- {2 3 4}: number of components
- Examples
  - `vec2`: two float components
  - `dvec4`: four double components
  - …

```
vec4 pos = vec4(1, 2, 3, 4);
```