

Hardware-Accelerated Real-Time Visualisation of Physical Structures in the Browser

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<https://github.com/oliverdixon/webcfd/tree/cs-demo-day/>

C++? In the browser?

- **Sure! Why not?**
- *WebAssembly* is an open standard, implemented by all major browsers, to run native code inside a web browser.
- This means that web applications can be written in any mainstream language:
 - Rust; Go; C#
 - C++; Java; assembly language
 - ... *anything with an LLVM front-end* ...
- Freed from the shackles of JavaScript!
- And we can use all of our existing libraries and frameworks: just compile them to WebAssembly.

GPU-accelerated graphics? In the browser?

- **Sure! Why not?**
- *WebGPU* is similarly an open standard, implemented by all major browsers, to allow web pages to communicate (more or less) directly with the GPU.
- Shaders are written in the WebGPU Shader Language (looks like Rust) to accelerate compute or rendering tasks with the user's GPU.
- Exposes APIs to the browser, so applications (including WebAssembly apps) can work with the GPU.

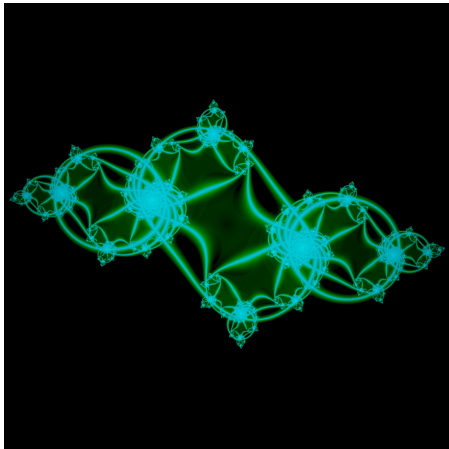
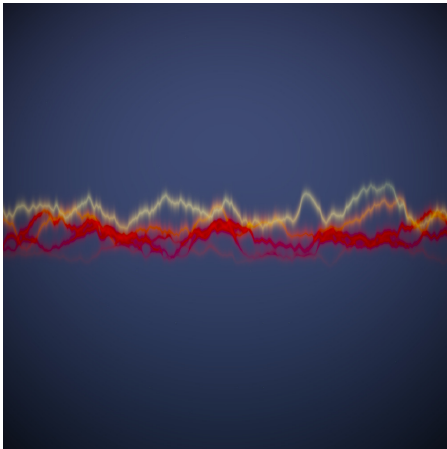
Anyone can write fully functional native applications with GPU-accelerated graphics that run *by default* in any modern browser!

Try it for yourself!



- <https://www-users.york.ac.uk/~od641/web-extra/demo.html>
- You might need to enable WebGPU in the browser settings:
<https://enablegpu.com>.

Samples (1/2)



Samples (2/2)

