WebAssembly with Rust

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Who am I?

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from

Dossier

and

RUST
OSLO

Hello!

meetup.com/IntilityCommunity

meetup.com/Rust-Oslo

What is WebAssembly?

An assembly[1] language for the web[2]

1: Except it's not really an assembly language as such.

2: Not web-specific so also useful for a lot of other stuff.

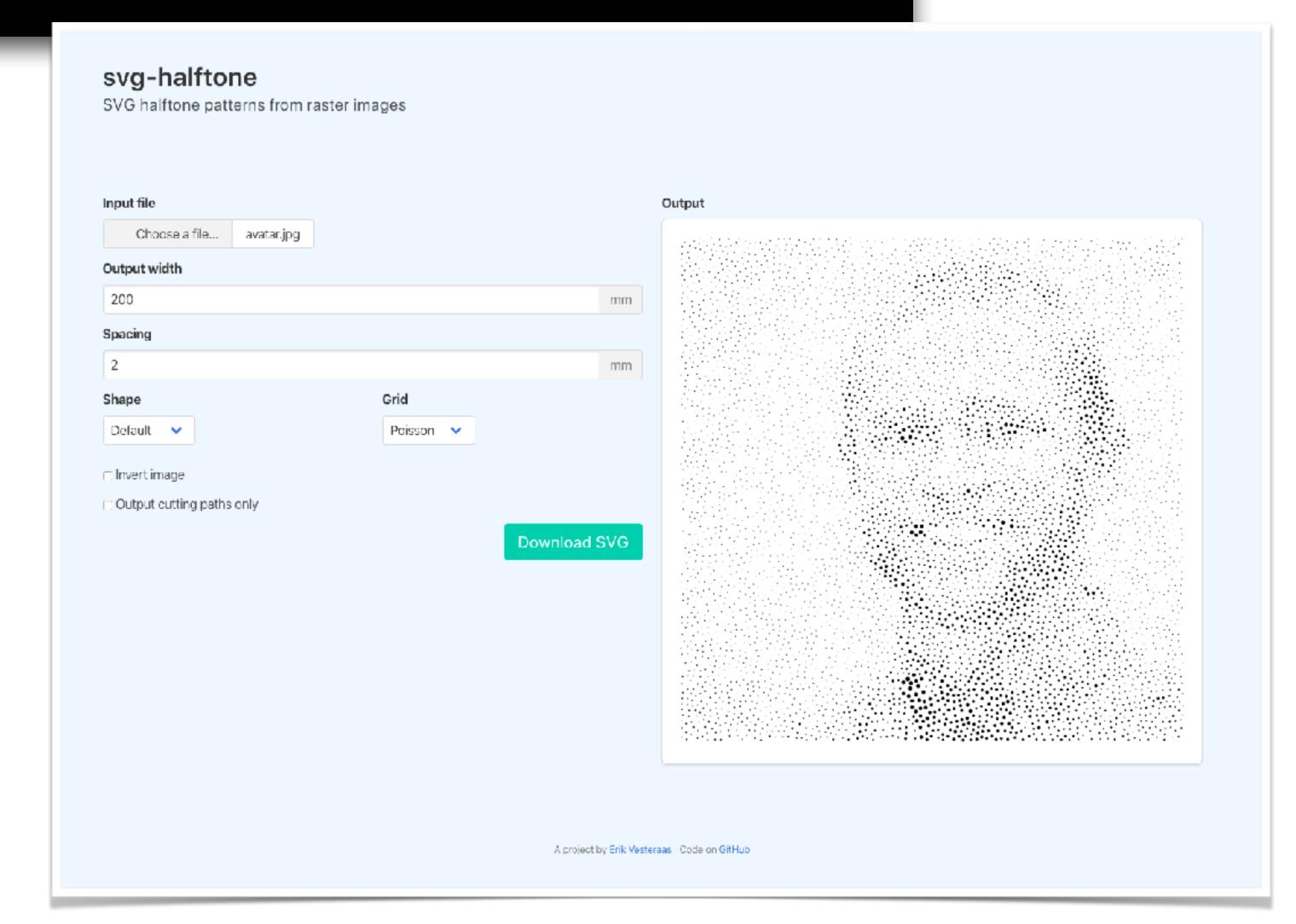# wat?

```
> cat factorial.wat
(module
  (func $fac (export "fac") (param f64) (result f64)
    local.get 0
    f64.const 1
    f64.lt
    if (result f64)
      f64.const 1
    else
      local.get 0
      local.get 0
      f64.const 1
      f64.sub
      call $fac
      f64.mul
    end))
```

wat2wasm

(webassembly.github.io/wabt/demo/wat2wasm/)

wasm2wat

```
> hexyl factorial.wasm
```

00000000	00 61 73 6d 01 00 00 00	01 06 01 60 01 7c 01 7c	0asm●000	●●●`●	●	
00000010	03 02 01 00 07 07 01 03	66 61 63 00 00 0a 2e 01	●●●0●●●●	fac00_.●
00000020	2c 00 20 00 44 00 00 00	00 00 00 f0 3f 63 04 7c	,0 0D000	000x?c●	
00000030	44 00 00 00 00 00 00 f0	3f 05 20 00 20 00 44 00	D000000x	?● 0 0D0
00000040	00 00 00 00 00 f0 3f a1	10 00 a2 0b 0b 00 14 04	00000x?x	●0x●●●●●
00000050	6e 61 6d 65 01 06 01 00	03 66 61 63 02 05 01 00	name●●●0	●fac●●●0
00000060	01 00 00		●00	

```
~/Pictures
❯ svg-halftone --spacing 2 --grid poisson --output-width 200 --invert avatar.jpg
Output written to out.svg
```

svg-halftone
SVG halftone patterns from raster images

Input file

[Choose a file... | avatar.jpg]

Output width

| 200 | mm |

Spacing

| 2 | mm |

Shape   **Grid**

[Default ▾]   [Poisson ▾]

☐ Invert image

☐ Output cutting paths only

[Download SVG]

Output

WebAssembly MVP

Only:

Four value types (i32, f32, i64, f64),

Functions on value types

Linear memory

No garbage collection primitives

No threads

Why Rust?

Let's start coding!

https://github.com/evestera/rust-wasm-workshop

Who knows what?