



China 2024

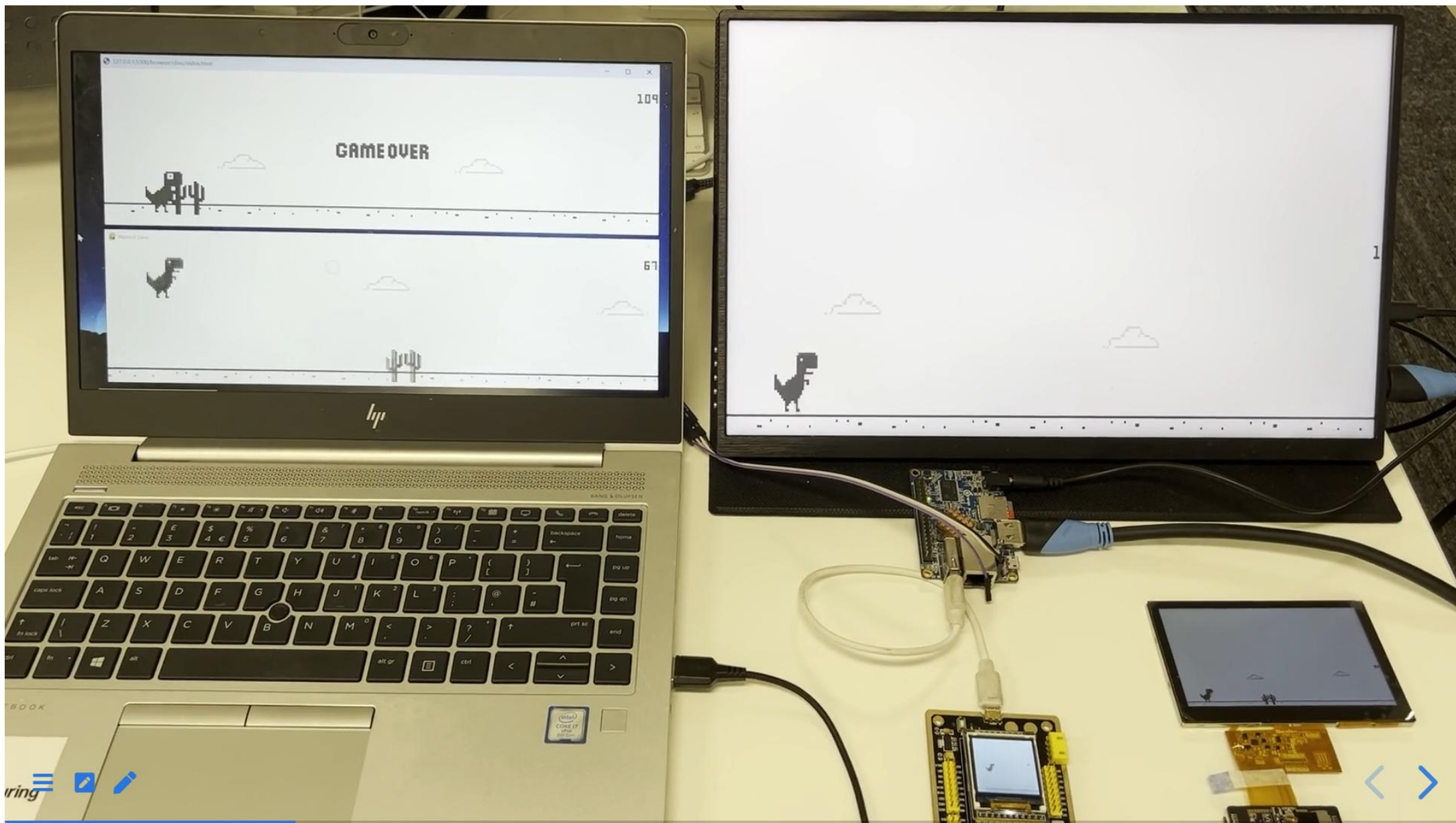
WASM on Embedded Systems (RTOS)

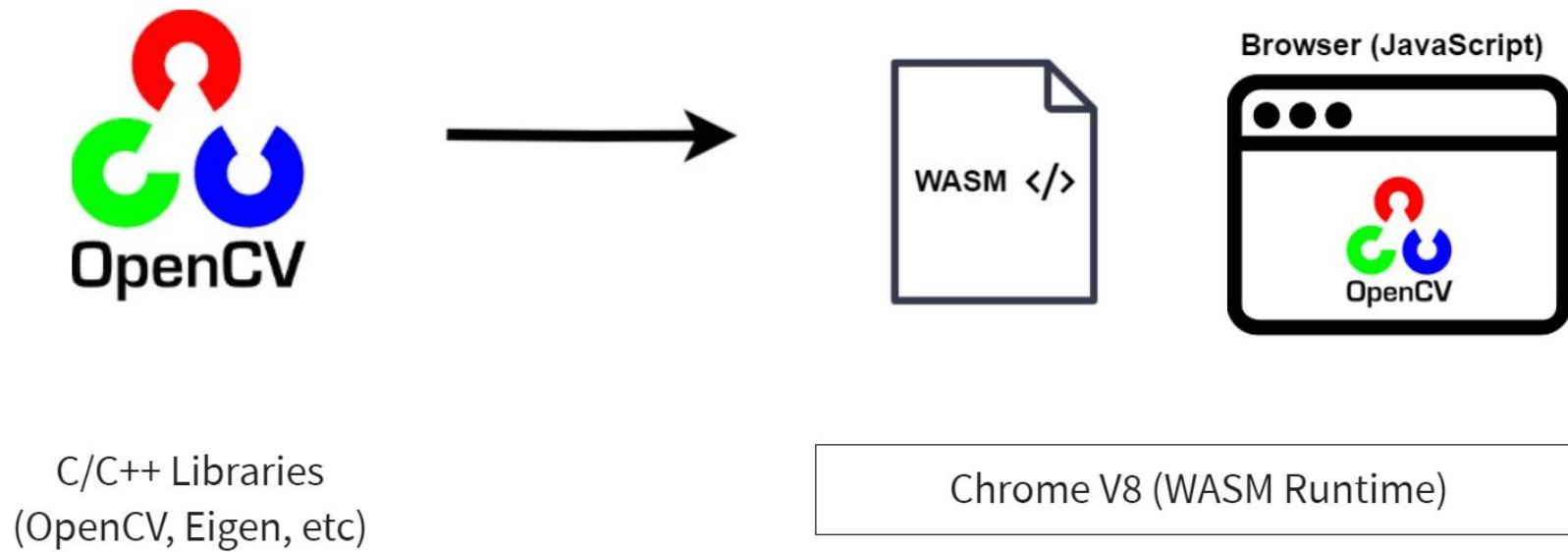
Real-Time Operating System

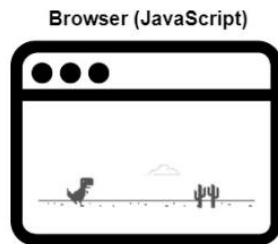
Han Wu, University of Exeter, the UK

 [Source Code](#)









Chrome (V8 Runtime)

Intel i7 (1.9GHz) - 16GB RAM



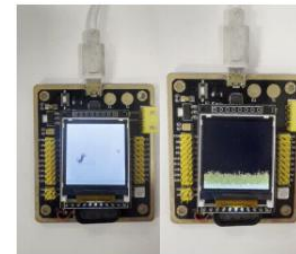
ARM Linux (WASM3 Runtime)

Cortex-A7 (1.2GHz) - 64MB RAM



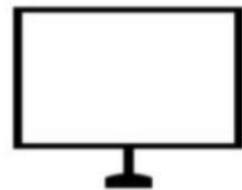
RT-Thread (WAMR Runtime)

Cortex-M4 (120MHz) - 640KB RAM



Arduino (WASM3 Runtime)

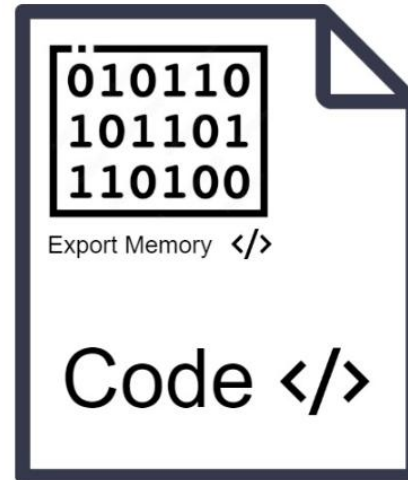
ESP32 (240MHz) - 520KB RAM



GUI (HDMI, LCD)

wasi-filesystem
wasi-sockets

wasi-digital-io
wasi-i2c
wasi-spi



Golang



Rust

Web Assembly System Interface (WASI) Support

| Platform | Hardware | Runtime | GUI | Language |
|-----------|-----------------|--------------------|-------------|------------|
| Browser | x64 | v8 engine (Chrome) | canvas | Javascript |
| Linux x64 | x64 | wasm3 | pygame | Python |
| Arm Linux | aarch64 / armhf | wasm3 | framebuffer | Python |
| RTOS | Cortex-M | WAMR | LVGL | C / C++ |
| Arduino | esp32 | wasm3 | ST7735 TFT | C / C++ |



Thanks

<https://wasm-embedded.wuhanstudio.uk>



 [Source Code](#)

