Mary GUILLEMARD
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💼 WORK EXPERIENCE

PRESENT NOVEMBER 2025	**Independent Contractor, VALVE** Working on NVIDIA open source graphics drivers in Mesa 3D and Linux, with a focus on performances, features and Vulkan. You can see the full extent of my contributions on mesa's merge requests and Linux DRM's subsystem mailing lists.
OCTOBER 2025 AUGUST 2023	**Graphics Software Engineer, COLLABORA** Worked on NVIDIA and Arm Mali open source graphics drivers in Mesa 3D and Linux, with a focus on compilers and Vulkan. ❯ Worked on bringing up support for Mali-G720 and Mali-G725 GPUs in PanVK and Panfrost ❯ Implemented VK_EXT_graphics_pipeline_library and related extensions in PanVK ❯ Added basic support for OpenCL on Mali-G610 in PanVK using Rusticl ❯ Reverse engineered and implemented VK_EXT_mesh_shader in NVK ❯ Reverse engineered and implemented VK_KHR_cooperative_matrix in NVK ❯ Researched and implemented 16-bit float support in NVK ❯ Worked on bringing Venus with Zink on par with various host drivers (RADV and ANV) against OpenGL conformance tests
JULY 2023 SEPTEMBER 2020	**Cyber Threat Analyst and Detection Engineer, HARFANGLAB, France** As part of the CTI team at Harfanglab, I worked on researching and implementing detection techniques against a large amount of cyber threats. ❯ Performed static and dynamic analysis against malware (using IDA or Ghidra) ❯ Implemented and improved threat detections (Sigma, YARA and others) ❯ Documented and reproduced attack techniques ❯ Implemented benchmarks for detection capabilities and unit tests for malicious behavior detection (Python and Gitlab CI) ❯ Integrated macOS support in the EDR (Endpoint Detection and Response) product (Rust) ❯ Developed eBPF based programs for detection on Linux (C) ❯ Ported Linux's EDR (Endpoint Detection and Response) product to Rust. ❯ Implemented and maintained support for ancient Linux kernels in Aya eBPF library.

⚙ OPEN SOURCE PROJECTS

ASAHI LINUX'S OPEN SOURCE GRAPHICS DRIVERS MAINTENANCE   2025 - PRESENT
Maintaining Apple M1 and M2 open source graphics drivers in Mesa 3D.
`C`

BLACK MAGIC DEBUG   2025
🔗 codeberg.org/blackmagic-debug/blackmagic

A self-contained debugger for microcontrollers.
I worked on adding support for ARMv8-A debugging capabilities to it.
`C`

✝ RYUJINX   2018 - 2024

Ryujinx was an open source Nintendo Switch emulator in C#.
As the second largest contributor and developer of Ryujinx, I implemented and maintained major parts of the emulator over the years.

❯ Rewrote the Audio Renderer using information gathered by static analysis of the audio firmware
❯ Improved High Level Emulation (HLE) by reverse engineering games and system modules
❯ Improved accuracy of GPU emulation by studying the behavior of its hardware counterpart
❯ Implemented and maintained the release system and the native dependencies across multiple operating systems

`C#` `OpenGL` `Vulkan` `GLSL` `SPIR-V` `CI` `IDA` `Ghidra`

🎓 EDUCATION

2016-2019	42 - Computer Science
2015	Baccalaureat S