

Emre Cecanpunar

GPU compilers · graphics drivers · Linux/DRM

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Selected Open Source Work

Mesa

2025 – Present

GPU drivers and compilers

- Develop and debug C/C++ code in Mesa GPU compiler and driver paths for Intel graphics and Arm Mali G610.
- Upstreamed fixes for [shader allocation lifetime in Intel's Jay compiler](#) and [failed compiler creation in KosmicKrisp](#); diagnose failures with Vulkan reproducers, CTS, IR inspection, and sanitizer builds.
- Used drm-shim for standalone RADV/ACO experiments without physical AMD hardware and documented the results in [technical notes](#).

Linux kernel

2025 – Present

Platform drivers and DRM

- Develop and test C fixes across platform/x86 and DRM drivers, including [hp-wmi](#), [i915](#), and [Panthor](#).
- Use focused reproducers and sanitizer-enabled builds to diagnose memory leaks, concurrency bugs, undefined behavior, and error paths.

LLVM

2026 – Present

MC/ARM

- [Submitted a fix](#) to use label-time ISA state for Thumb function symbols when a later `.type` directive marks the function.

Apache NuttX

2026

SoC bring-up and upstream fixes

- [Upstreamed the initial Arm64 port](#) for the [Rockchip RK3588S SoC](#) and [Orange Pi 5 Pro](#), booting through U-Boot to NSH with GICv3, timer, UART, and PSCI support.
- [Fixed two EDID parsing bugs](#): incorrect standard-timing decoding and use of the wrong chromaticity macro.

Other upstream work

2026

- [NVIDIA egl-wayland2 PR](#): fixed a memory-safety issue in protocol override parsing.
- [Wayland MR](#): fixed a use-after-free in the shared-memory buffer creation failure path.

Experience

Embedded Software Engineer Intern, Baykar Technologies

Feb 2025 – Jun 2025

T3 Gemstone platform

- Initiated the [Apache NuttX](#) port to the TI AM67A SoC: brought up an Arm Cortex-R5F core, configured the MPU and caches, defined the memory map, and implemented the early boot path.
- Wrote linker scripts, GPIO drivers, and UART drivers; debugged NuttX ELF loading through Linux remoteproc, using `readelf` to inspect load addresses, sections, and vector/resource table requirements.

Avionics Software Developer, Atmaca Rocket Team

Sep 2022 – May 2023

University rocketry team · TÜBİTAK competition

- Developed avionics firmware with redundant controllers and a parachute-deployment algorithm using multi-sensor altitude fusion and Kalman filtering; the avionics technical report received a full score from TÜBİTAK.

Projects

hpfand

2026 – Present

Fan-control daemon for HP Victus and Omen laptops

- Built a fail-safe Linux fan-control daemon with CPU/GPU sensor aggregation, sensor and fan-stall protection, emergency cooling, and verified firmware handoff.

Education

B.Sc. Computer Science & Engineering, Akdeniz University

Sep 2022 – Jun 2026