

satana's portfolio

TL;DR

A non-comprehensive collection of my works. Latest [CV](#) and [portfolio](#) at satana.skylittlesystem.org. Email: satana@skylittlesystem.org

Links

- [Portfolio \(HTML\)](#) • [CV](#) • [GitHub](#) • [LinkedIn](#) • [Email](#)

2006-present - Em Edificação

A *video game written from scratch in C* using libSDL. My biggest personal project, on which I've been working over the years. Features a *BVH tree* and a *Sequential Impulse solver* for *fast physics simulation*. Runs on *GNU/Linux*, *Android* and *modern browsers*.

- [Em Edificação](#)
- [pudiva/em_edificacao](#)

2024 - dogstats-attribution

Unblocked a team who needed to tag DataDog metrics with ownership information, guiding them through a *risky performance optimisation* and helping them decide to *compromise on features rather than site availability*.

- [dogstats-attribution: a risky optimisation](#)

2023 - openssl-backtrace

Debugged an error involving the *Trilogy MySQL driver* and *libcurl* by patching *OpenSSL* to surface a stack trace from *C* in *Ruby* land.

- [openssl-backtrace: debugging C from Ruby land](#)
- [openssl-backtrace: Make OpenSSL include a stack trace on its errors](#)
- [curl: Clear OpenSSL error queue after SSL shutdown](#)
- [trilogy: Fixes to OpenSSL error handling](#)

2022-2023 - dogstats-threads

Fixed a series of bugs causing DataDog metric corruption that involved a *race condition* and an existing performance optimisation. To fix the bugs without sacrificing performance, I *optimised* the *dogstatsd-ruby* gem by implementing async metric serialisation.

- [dogstats-threads: a tale of performance and bugs](#)
- [DataDog/dogstatsd-ruby: Delay metric serialisation until flush](#)
- [DataDog/dogstatsd-ruby: delay_serialization: implement feature](#)
- [DataDog/dogstatsd-ruby: Is it safe after fork\(\) or not?](#)

2022 - vitess-performance

Supported the sharding of MySQL clusters by proposing and implementing *performance optimisations* to Vitess.

- [Vitess: Feature Req: optimise cross-shard joins with literal conditions on uniq idx](#)
- [Vitess: Fix OR 1=0 causing queries to scatter](#)
- [Vitess: Speedup DDLs by not reloading table size stats](#)

2022 - rce-regex

Discovered and fixed an RCE (Remote Code Execution) vulnerability worth *\$20k in bounty* due to a combination of naive shell script interpolation and a mistake on regex validation. I was featured on an internal post and on the company's security training, presenting the contents of this writeup.

- [rce-regex: a case of command injection](#)

2020 - activerecord-factory

A *Ruby on Rails* pattern for *dynamic user-designed schemas* with *scalable performance* and better *developer experience*.

- [activerecord-factory: dynamic user-designed schemas](#)

2006-2011 - Rogix/Gordax

Developed a *multilib GNU/Linux distro* for x86_64 based on the [Linux From Scratch](#) book. A personal project driven by curiosity for the foundations and our *Free Software right to build everything from source*. Featured it's own build script system, package manager, multilib header wrappers and boot scripts. My *daily driver for 5 years* until its host computer passed away.

- [rogix_gordax: archaeological archive](#)

Other contributions

2022 - disable-while-trackpointing

- [libinput: new option dwtp \(disable-while-trackpointing\)](#)
- [swaywm: Support libinput's 1.21 new dwtp option](#)

2022 - zeitwerk

- [fxn/zeitwerk: Module.const_source_location\(\) gives unexpected results](#)

2022 - void-linux

- [void-linux: Aegisub: update to wangqr fork 3.3.2 \(fix #31637\)](#)
- [void-linux: "docker-init": executable file not found in \\$PATH](#)
- [void-linux: New package: sane-airscan-0.99.24](#)

2020 - neo4j

- [Active Graph \(Neo4j.rb\): Fix wait_for_connection](#)

2020 - govuk

- [LBHackney-IT/repairs-management: multiple contributions](#)
- [SeneddCymru/e-petitions: multiple contributions](#)
- [alphagov/e-petitions: multiple contributions](#)
- [alphagov: updates and fixes to multiple services](#)

2020 - emscripten-sdl2-audio

- [Emscripten: SDL2_mixer: fix unconditional dependence on mpg123 and vorbis](#)
- [Emscripten: SDL2_mixer: add support for WAV music](#)
- [Emscripten: Refactor tests for SDL2_mixer formats](#)
- [Emscripten: Add MP3 support to SDL2_mixer](#)

2020 - xpm-image-transparency

- [SDL_image: Fix XPM having white as color key \(bugzilla\)](#)
- [Gimp: Fix xpm exporter saving unused transparency](#)

2020 - git-neovim-mergetool

- [Git: Support neovim as mergetool](#)
- [Git: mergetools: add support for nvimdiff \(neovim\) family](#)
- [Git: mergetool--lib: improve support for vimdiff-style tool variants](#)