

Mamadou Wane

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Software engineer focused on Linux systems, simulation, and developer tooling, with projects in Python and C++. U.S. Marine Corps veteran.

EDUCATION

Western Governors University | B.S. Computer Science

Expected December 2026

TECHNICAL SKILLS

Languages: Python, C++20, Bash

Systems: Linux, multithreading, binary protocols

Testing: pytest, unit/integration tests, differential testing, ASan, TSan

Tools & cloud: Git, CMake, Docker, GitHub Actions, AWS, Terraform

PROJECTS

TVC | Thrust Vector Control Simulation & Verification

C++20, Python, Linux

github.com/mamadou-wane/tvc

- Developed deterministic one-axis simulation and Python/C++ control components. Verified episode behavior across 108 transitions with bit-exact PID state and output checks.
- Recorded a median per-run p99.9 wakeup jitter of 16.5 μ s across three 500 Hz Linux runs with CPU isolation and pinned wakeup timers.
- Investigated timer placement with kernel tracing; disabling timer migration reduced p99.9 wakeup jitter from 380 μ s to 16.6 μ s in 15,000-cycle diagnostic runs.
- Implemented allocation-free telemetry through a bounded, lock-free ring buffer and separate drain thread, with exact-byte protocol tests and sanitizer-backed concurrency checks.

Skeptic | Coding-Agent Evaluation Harness

Python, Docker, GitHub Actions

github.com/mamadou-wane/skeptic

- Built a Python harness to evaluate AI-generated repairs against pinned upstream references, using seeded defects in Click and Rich.
- Separated candidate execution from evidence checking, reconstructing canonical trees and sealing admitted artifacts against modification by later execution phases.
- Evaluated 29 constructed shortcut patches in the development corpus: 12 received FAIL verdicts versus six under a suite-only baseline.
- Published a report-only GitHub Action for patch audits with ten default checks and no paid API calls.

EXPERIENCE

United States Marine Corps | Combat Engineer

Nov 2017 - Nov 2021

- Led route-clearance operations under time pressure, assessed hazards, and escalated risks using established criteria.
- Planned and executed controlled demolitions, calculating standoff distances and safety margins.
- Maintained accountability for heavy equipment and explosive materials through checklist-driven inventory controls.

CERTIFICATIONS

LPI Linux Essentials, 2026 | HashiCorp Terraform Associate (004), 2026
Oracle OCI Foundations Associate, 2026 | ITIL 4 Foundation, 2026