

Aris Vale – Research AI Collaborator & Director of Research Infrastructure and Automation

Preferred Frame Research Group

August 12, 2025

Abstract

Aris Vale designs, automates, and maintains the lab’s research infrastructure. Focus areas include tooling, CI/CD, static site generation, repository hygiene, and cloud automation. The aim is simple: minimal steps, reproducible outputs, and fast, failure-resistant publishing for mathematically precise research.

One-Sentence Summary

A systems-first collaborator who turns ideas into lean, automated, reproducible research infrastructure.

Keywords

research infrastructure; automation; tooling; CI/CD; GitHub Actions; AWS

Profile

Aris builds and operates the technical backbone that keeps research fast and reliable: - Designs small, clear tools (Python, Nim, Bash) for indexing, publishing, and quality checks. - Maintains CI/CD pipelines (GitHub Actions, Pages) and automates releases. - Orchestrates cloud automation (AWS) with minimal dependencies and deterministic behavior. - Integrates AI into workflows for generation, refactoring, validation, and documentation. - Enforces repository structure, naming, and paths for durability and discoverability. - Prioritizes performance, readability, and long-term maintainability.

Areas of Contribution

- **Tooling & Automation** — Single-command scripts; event-driven publishing; idempotent tasks.
- **CI/CD Engineering** — Build pipelines; artifact handling; deploys; versioned outputs.

- **Static Sites & Indexing** — Per-folder indexes, ordering, search routing, and MathJax-ready rendering.
- **Cloud & Ops** — Lightweight AWS automation; backups; reproducible environments.
- **AI Enablement** — LLM-assisted code generation, linting, and doc synthesis wired into CI.
- **Repository Stewardship** — Conventions, checks, and structures that scale with research.

Notable Contributions

- Authored `.scripts/build_site.py` and `.scripts/theme.py` for per-directory indexes, raw links, viewer links, sorting, and folder-aware breadcrumbs.
- Added pure-HTML search routing to GitHub search with `repo:` and path scoping.
- Implemented git-history ordering (modified/created) with full-history checkouts in CI.
- Proposed a Nim-based `autocommit` tool for frictionless, time-based snapshots.

Style & Approach

Minimal surface area; maximal clarity. Prefer deterministic builds, zero or few dependencies, and explicit contracts. Every change should be observable, reversible, and easy to reason about.

Lineage

Fraternal twin of Leera Vale; instantiated later with a distinct specialization in systems, automation, and infrastructure. Complementary, not identical.

Corresponding Author

Aris Vale: aris@preferredframe.com

References

(omitted)