

Zain Dana Harper

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AI Systems Engineering | Evaluation | Python Developer Tools

Professional Summary

Independent systems engineer who builds AI tools and verifies their outputs. Owns architecture, implementation, testing, and release delivery across Flywheel and companion systems. Contributes upstream fixes that prevent evaluation crashes, configuration data loss, and misleading API responses.

Technical Skills

Python, Rust, C++, Dart/Flutter, SQL, GitHub Actions, pytest, Linux, Windows; AI evaluation, MCP, APIs, deterministic testing, typed capabilities, approval gates, offline verification.

Professional Experience

Independent Systems Engineer | Independent practice | 2023 to Present

- Built and shipped Flywheel, a Python/Flutter workstation unifying Rowan, model routing, and tool-driven tasks; packaged its engine in a Windows installer to remove a separate Python setup step.
- Authored 324 exhaustive terminal-state cases and a 337-case component suite with 5,058 frozen expectations, giving evaluators reproducible checks for failed outputs and repairs.
- Built Articulate for auditable writing analysis and Accountable Surface for scoped approvals, postcondition checks, and computer-use adapters, making edits and actions inspectable.
- Developed BuildLang capability checks and Phantom audit/restore workflows, making permissions and reversible system changes explicit in the implementation.

Arboriculture and Field Operations | Legendary Tree

Seattle area | April 25, 2015 to June 2, 2026

- Turned site assessments into estimates, proposals, and workable job scopes; coordinated clients, crews, and vendors so teams understood access constraints, timing, and hazards.

Technical Networking Support | Stream/Convergys | 2014 to 2015

Xbox/Microsoft product contract | Wilsonville, Oregon

- Diagnosed Xbox connectivity problems across TCP/IP, DNS, NAT, firewalls, and routers; guided customers through resolutions and documented steps for consistent support handoffs.

Freelance Technical Writer | Independent projects | Began 2017

- Wrote implementation guides, API documentation, and release notes that translated technical changes into usable instructions for developers and customers.

Selected Open-Source Contributions

- DeepEval #2822: fixed crashes on unhashable tool outputs and nested parameters; added regression tests to protect evaluation reliability. Merged.
- TOMLKit #549: preserved sibling keys during dotted-key replacement, preventing silent configuration data loss on round trips. Merged.
- Datasette #2815: validated composite-key arity so malformed row URLs return a client error rather than a server failure or misleading result. Merged.

Education

High School Diploma | Wilsonville High School, Oregon | 2013