Alan Szmyt

Software Engineer | Platform, Developer Tools, and AI-Assisted Systems

Greater Boston, MA

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Summary

Software engineer with 6+ years delivering mobile, geospatial, and analytical systems for government and research sponsors. Builds developer platforms, Rust and Python tooling, local-first products, and AI-assisted workflows with reproducible infrastructure and CI/CD. Contributed to approximately $1M in follow-on sponsor funding and authored a DOI-backed independent research artifact.

Experience

Software Engineer, Associate Staff *Apr 2019 - Aug 2025*

MIT Lincoln Laboratory Lexington, MA

- Improved developer velocity by optimizing Android and web build pipelines using Gradle, Java, Kotlin, Vite, and ESBuild while reducing local environment configuration drift.
- Delivered a low-connectivity mobile tracking system for humanitarian commodity monitoring, supporting end-to-end supply-chain visibility in constrained network environments.
- Contributed to approximately $1M in follow-on sponsor funding by designing and delivering a humanitarian deconfliction platform for secure, auditable analyst reporting.
- Shipped geospatial decision-support applications integrating shared data hubs, interactive maps, and domain-specific analytical datasets for government and research sponsors.

Independent Engineering & Research

Founder & Systems Architect *Jan 2023 - Present*

Incompris LLC Massachusetts

- Architected and developed Ego Hygiene, a local-first Flutter platform using Dart, Riverpod 3, Drift, Freezed, offline-first repository abstractions, and provider-independent AI interfaces.
- Built Renderflow, a Rust specification-driven document engine with graph-planned transformations, parallel execution, incremental caching, and multi-format PDF, HTML, and DOCX output.
- Built Relay, a versioned library of reusable GitHub Actions and CI contracts that centralizes repository automation while preserving consumer-owned configuration and deployment boundaries.
- Designed AI-assisted workflow architectures that treat language-model agents as bounded components with explicit schemas, context assembly, tool registries, synchronization checkpoints, and verification loops.

Research Artifact

reflector: Reflective Synchronization Systems for Recursive AI-Assisted Software Engineering

Artifact year: 2026

Artifact status: Independent DOI-backed research artifact

Proposes synchronization checkpoints, reflective auditing, specification-driven orchestration, and human-AI governance patterns for recursive AI-assisted software engineering workflows.

Concept DOI: 10.5281/zenodo.20477044 | ORCID: 0009-0008-5291-9795

Education

M.S., Software Development *Sep 2021 - Apr 2023*

Boston University Boston, MA

B.S., Computer Science; Minor in Mathematics *Sep 2012 - Jan 2017*

University of Massachusetts Lowell Lowell, MA

Skills

Platform & Developer Experience

GitHub Actions, Docker, Dev Containers, CI/CD, Taskfile, Git, Gradle, Vite / ESBuild, Reproducible Environments

Languages

Python, Rust, Dart, Java, Kotlin, JavaScript, C++

Systems & Workflows

Local-First Systems, CLI Design, Specification-Driven Development, Schema-Driven Development, Bounded Agent Orchestration, Workflow Automation

Mobile & Geospatial

Flutter, Riverpod, Drift, Freezed, Android, Low-Connectivity Systems, Geospatial Visualization