SLM (Security Lifecycle Manager)

SLM provides a real-time secret detection solution powered by fine-tuned small language models (SLMs) running on AWS Trainium.

Motivation

Over 10 million secrets leaked on GitHub in 2023

Sensitive data, such as API keys and credentials, are constantly being exposed on public code repositories, leading to significant security risks and financial losses.

SOC-2 compliance requires continuous secret scanning

Maintaining SOC-2 compliance mandates regular monitoring and detection of secret leaks, which is a crucial requirement for many organizations.

Average cost of a data breach: $4.45M

The financial impact of a data breach can be devastating, with the average cost reaching millions of dollars per incident.

Existing solutions are expensive or slow

Current secret detection tools are either too costly ($100K+/year) or rely on batch processing, which fails to provide real-time protection.

The constant threat of secret leaks, the high financial impact, and the need for compliance have created a significant opportunity for a cost-effective, real-time secret detection solution.

Problem Statement

Current Options

GitGuardian/TruffleHog: $10K-100K/year, limited customization; GPT-4 API: $100 per 1M scans, data leaves your network; Regex-based tools: High false positives, miss context-aware leaks

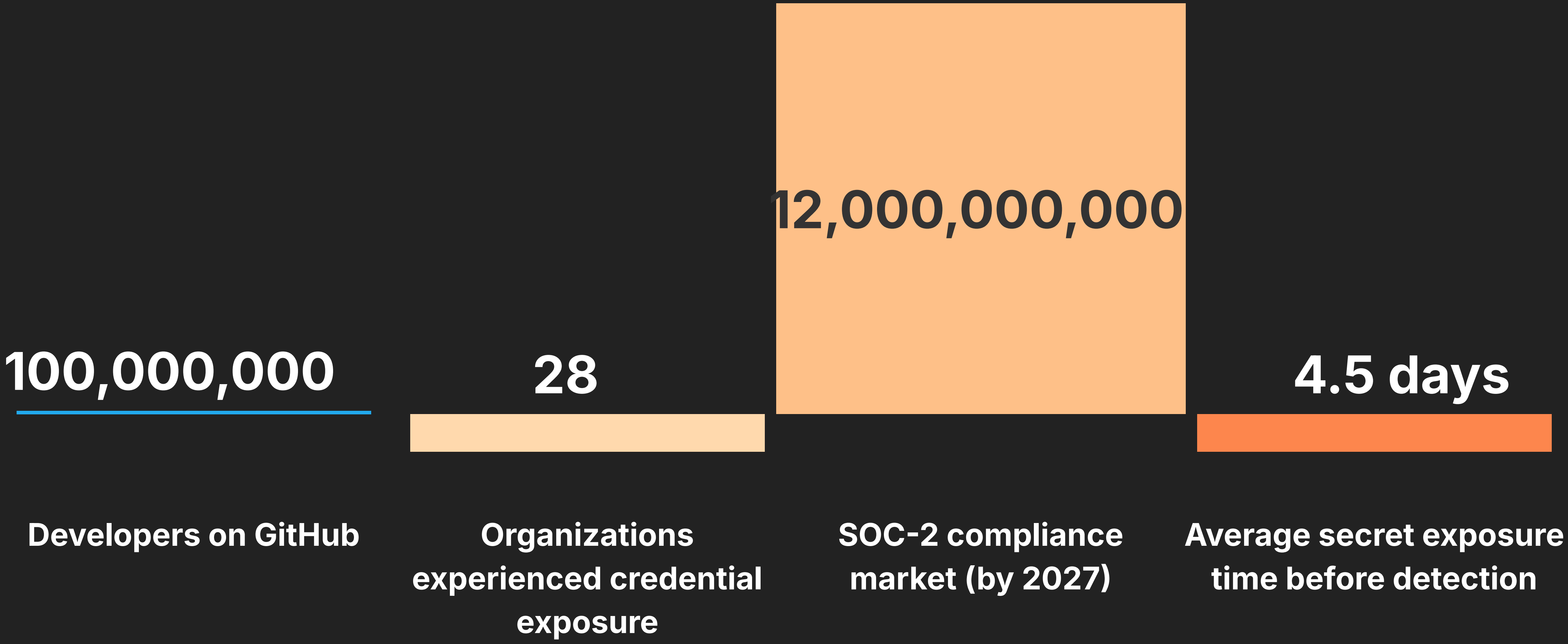
What's Missing

Real-time detection at commit time, Structured, actionable output for SOC-2 audits, On-premise deployment for sensitive codebases, Cost-effective solution for startups/mid-size companies

Existing solutions are either expensive, slow, or inadequate, leaving a need for a cost-effective, real-time, and on-premise secret detection solution.

Problem Size

The size of the potential market for a solution to the problem of secret leaks



Our Solution

Generated 1,000 realistic training examples

Developed a dataset of exposed and safe code samples to train the model

Fine-tuned Qwen 3-1.7B on AWS Trainium

Leveraged AWS Trainium to efficiently fine-tune the large language model in 2 hours

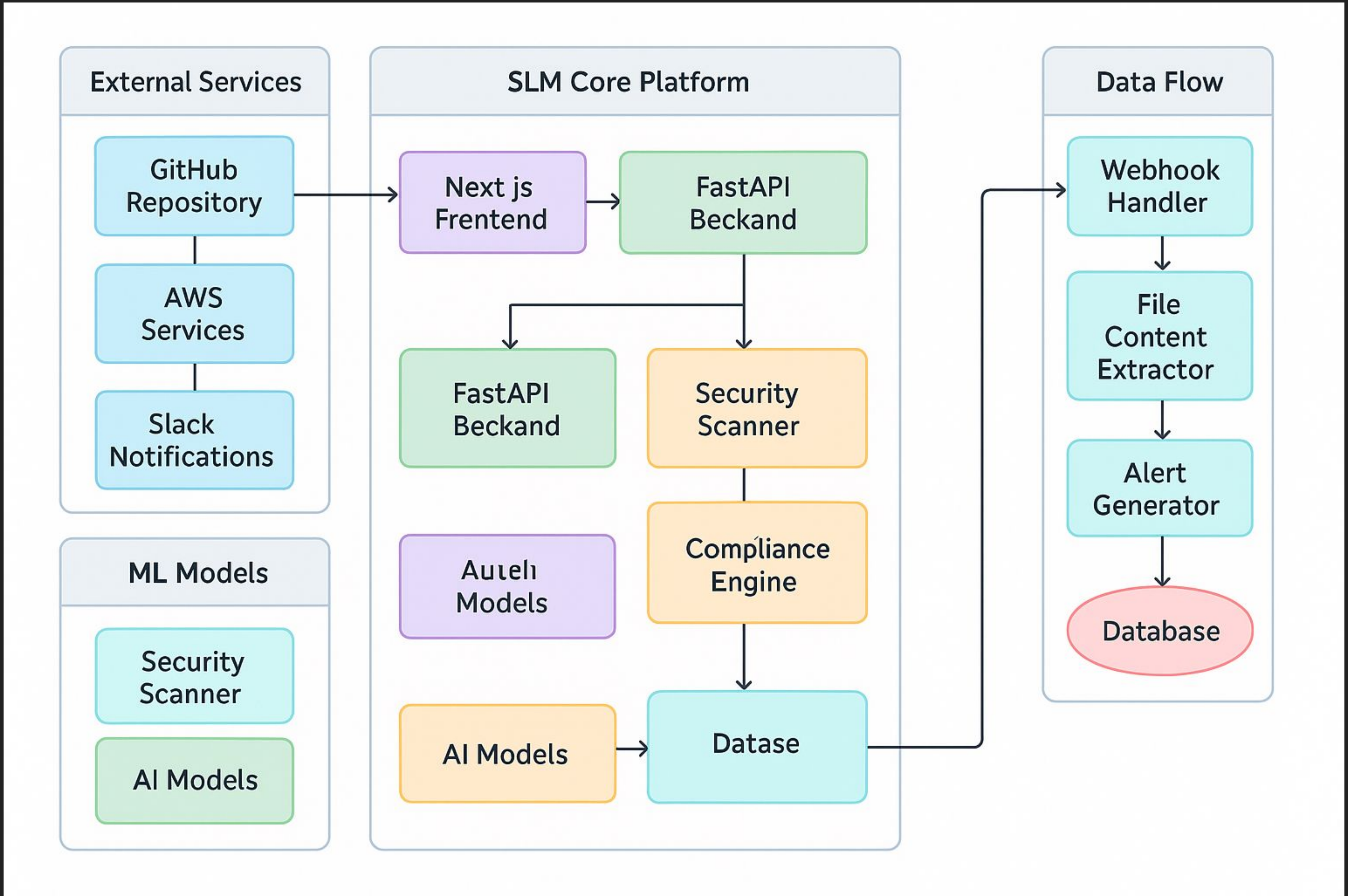
Deployed API endpoint for real-time scanning

Deployed the fine-tuned model as an API endpoint for real-time SOC-2 secret detection

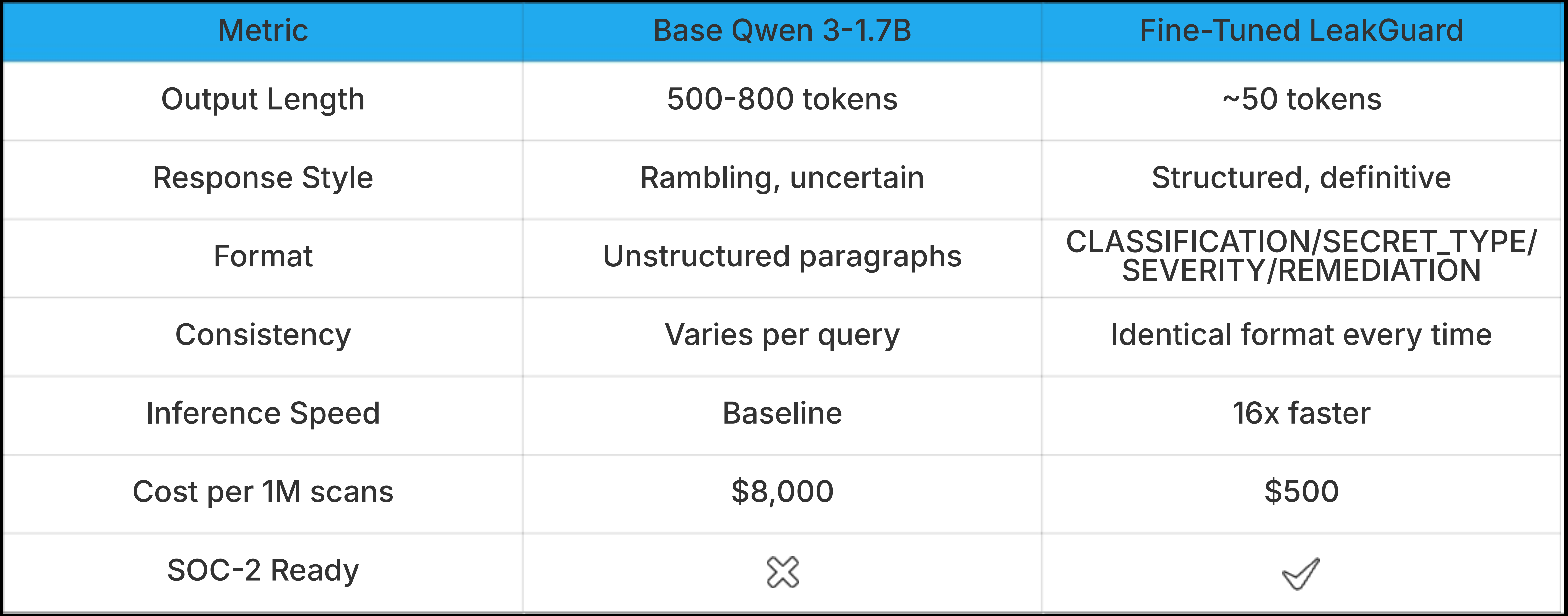
Created structured output format

Designed a structured output format for audit compliance: CLASSIFICATION/SECRET_TYPE/SEVERITY/REMEDIATION

Our fine-tuned SLM model for SOC-2 secret detection has demonstrated significant improvements in speed, cost, and output quality. By leveraging AWS Trainium and a structured output format, we have delivered a reliable and efficient solution for real-time scanning and audit compliance..


External Services
GitHub Repository
AWS Services
Slack Notifications
ML Models
Security Scanner
AI Models
SLM Core Platform
Next js Frentend
FastAPI Beckand
FastAPI Beckand
Security Scanner
Auteli Models
Compliance Engine
AI Models
Datase
Data Flow
Webhook Handler
File Content Extractor
Alert Generator
Database

Side-by-Side Comparison



Metric	Base Qwen 3-1.7B	Fine-Tuned LeakGuard
Output Length	500-800 tokens	~50 tokens
Response Style	Rambling, uncertain	Structured, definitive
Format	Unstructured paragraphs	CLASSIFICATION/SECRET_TYPE/ SEVERITY/REMEDIATION
Consistency	Varies per query	Identical format every time
Inference Speed	Baseline	16x faster
Cost per 1M scans	$8,000	$500
SOC-2 Ready	✗	✓

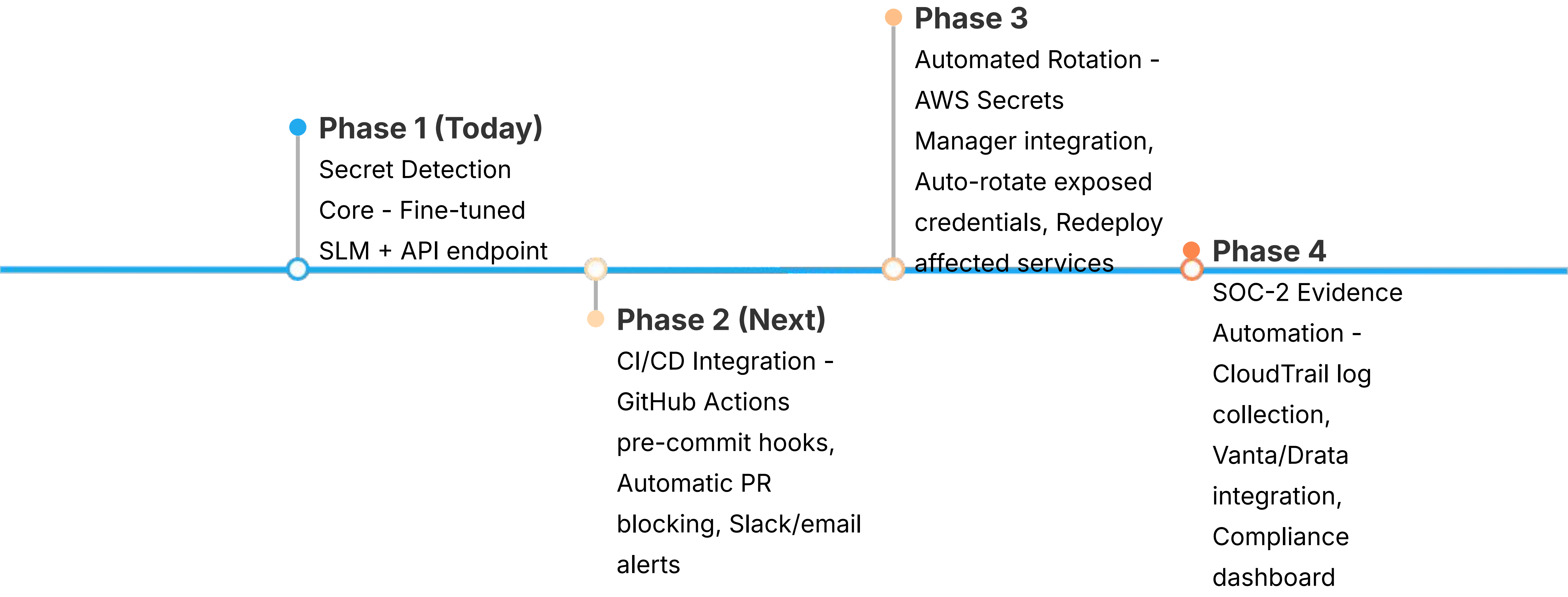
*Data provided in the original prompt

Impact & Metrics

Metric	Value
Dataset Size	1,000 examples
Cost	**94% cost reduction ($8K → $500 per 1M scans)**
Model Size	1.7B base + 16M LoRA params
Latency	~100ms per scan
Throughput	126 tokens/sec input, 54 tokens/sec output
Speed Improvement	16x faster than base model

Team

Future Vision - Roadmap



Phase 1 (Today)

Secret Detection Core - Fine-tuned SLM + API endpoint

Phase 2 (Next)

CI/CD Integration - GitHub Actions pre-commit hooks, Automatic PR blocking, Slack/email alerts

Phase 3

Automated Rotation - AWS Secrets Manager integration, Auto-rotate exposed credentials, Redeploy affected services

Phase 4

SOC-2 Evidence Automation - CloudTrail log collection, Vanta/Drata integration, Compliance dashboard