

# THE ART OF HARNESS ENGINEERING

BUILDING, TESTING, AND GOVERNING  
AI SYSTEMS IN PRODUCTION



## OBSERVE

Know what's happening



## PROTECT

Enforce guardrails



## TEST

Validate behavior



## MONITOR

Detect issues early



## GOVERN

Ensure accountability

CONTEXT

RETRIEVAL

GUARDRAILS

EVALUATION

OBSERVABILITY

WORKFLOWS

GOVERNANCE

GOVERNANCE

REAL-WORLD  
LESSONS FROM  
OpenAI  
LangChain  
Stripe  
AND LEADING  
FINANCIAL  
INSTITUTIONS

STEVE T.

# The Art of Harness Engineering

Building, Testing, and Governing AI Systems in Production

Steve T. Team Publications

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# Contents

<b>The Art of Harness Engineering</b> . . . . .	<b>1</b>
Building, Testing, and Governing AI Systems in Production . . . . .	1
Table of Contents . . . . .	2
<b>Introduction: The Model Is Not the Product</b> . . . . .	<b>5</b>
A Five-Month Experiment That Changed How We Think About Software Engineering . . . . .	5
Why This Book Matters Now . . . . .	5
What You Will Learn . . . . .	5
How to Read This Book . . . . .	5
A Note on Scope . . . . .	5
Chapter 1: What Is a Harness? The AI Systems Engineering Problem . . . . .	6
Chapter 2: Historical Context: From Scripts to AI Pipelines . . . . .	8
Chapter 3: Foundational Architecture: Designing the Harness . . . . .	10
Chapter 4: Testing AI Systems: A New Paradigm . . . . .	12
Chapter 5: Evaluation Frameworks: Measuring What Matters . . . . .	14
Chapter 6: Guardrails, Safety, and Governance . . . . .	16
Chapter 7: Automation, CI/CD, and MLOps for Harnesses . . . . .	18
Chapter 8: Tools of the Trade: Frameworks, Platforms, and Libraries . . . . .	20
Chapter 9: Real-World Case Studies . . . . .	22
Chapter 10: Economic and Organizational Considerations . . . . .	25
Chapter 11: Emerging Trends and Future Directions . . . . .	28
Chapter 12: Conclusion: The Engineer’s Responsibility . . . . .	30
References . . . . .	31

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# Table of Contents

**Introduction:** The Model Is Not the Product

## **Chapter 1: What Is a Harness? The AI Systems Engineering Problem**

- From Model to Product: Why AI Needs More Than an API
- Anatomy of an Agent Harness: Components and Layers
- The Stochasticity Problem: Deterministic Software vs. Probabilistic Models
- Cost of Ignoring the Harness: Real-World Failure Stories
- Defining the Discipline: What “Harness Engineering” Actually Means

## **Chapter 2: Historical Context: From Scripts to AI Pipelines**

- The Pre-AI Era: Traditional Software Wrappers and Abstractions
- Early Machine Learning: Batch Processing and Offline Pipelines
- The Deep Learning Revolution: Models as Services
- The LLM Inflection Point: From API Calls to Conversational Agents
- What History Teaches Us: Patterns of Repeated Innovation

## **Chapter 3: Foundational Architecture: Designing the Harness**

- The Canonical AI Application Architecture
- Input Preprocessing and Guardrails
- Model Orchestration: Routing, Chaining, and Aggregation
- Output Postprocessing and Validation
- State Management and Context Windows
- Scaling Patterns: From Prototype to Production

## **Chapter 4: Testing AI Systems: A New Paradigm**

- Why Traditional Testing Fails for AI Outputs
- Evaluation Datasets and Test Suites
- Regression Testing with Golden Sets
- Adversarial and Red-Team Testing
- Performance and Latency Testing
- Continuous Evaluation Pipelines

## **Chapter 5: Evaluation Frameworks: Measuring What Matters**

- Dimensions of AI Quality: Accuracy, Safety, Fairness, Latency, Cost
- Automated vs. Human Evaluation
- LLM-as-Judge and Auto-Evaluation Methods
- Benchmark Suites and Standardized Evaluations
- Building Custom Evaluation Pipelines
- Tracking Quality Over Time: Dashboards and Scorecards

## **Chapter 6: Guardrails, Safety, and Governance**

- The Safety Stack: Input Filters, Output Validators, Policy Engines
- Jailbreaks and Adversarial Attacks: What to Guard Against
- Content Moderation at Scale
- Compliance and Regulatory Requirements
- Incident Response and Rollback Strategies
- Auditability and Explainability

## **Chapter 7: Automation, CI/CD, and MLOps for Harnesses**

- CI/CD for AI Applications (Not Just Models)
- Automated Evaluation as a Gate
- Model Versioning and A/B Testing
- Monitoring and Observability in Production
- Alerting, On-Call, and Incident Management
- The Feedback Loop: Learning from Production

## **Chapter 8: Tools of the Trade: Frameworks, Platforms, and Libraries**

- Orchestration Frameworks: LangChain, LlamaIndex, DSPy, and Alternatives
- Evaluation Platforms: Ragas, DeepEval, Arize, WhyLabs
- Guardrail Tools: NeMo Guardrails, Guardrails AI, LLM Guard
- Monitoring and Observability: LangSmith, Phoenix, Langfuse
- Open Source vs. Commercial Tooling Trade-offs
- Choosing the Right Stack for Your Team

## **Chapter 9: Real-World Case Studies**

- Case Study 1: Enterprise AI Copilot (Internal Tooling)
- Case Study 2: Customer-Support Chatbot (Public-Facing)
- Case Study 3: AI-Powered Search and RAG System
- Case Study 4: Autonomous Agent Workflow (Multi-Step Reasoning)
- Cross-Cutting Lessons: What Works, What Does Not

### **Chapter 10: Economic and Organizational Considerations**

- The Cost of AI Inference: Token Economics and Optimization
- Build vs. Buy Decisions for Harness Components
- Team Structures: Who Owns the Harness?
- Vendor Lock-In and Portability Strategies
- ROI Measurement and Business Value Tracking
- Scaling the Organization Alongside the System

### **Chapter 11: Emerging Trends and Future Directions**

- Agentic AI and Multi-Agent Orchestration
- Multimodal Harnesses: Text, Image, Audio, Video
- On-Device and Edge AI Harnesses
- The Future of Evaluation: Automated, Continuous, Adaptive
- Regulatory Landscape and Compliance Automation
- Is Harness Engineering Becoming a Distinct Career?

### **Chapter 12: Conclusion: The Engineer's Responsibility**

- Ten Principles of Great AI Harness Engineering
- What We Have Learned About Building with Uncertainty
- The Ethical Dimension: Engineers as System Designers
- A Call for Rigor, Humility, and Craftsmanship

### **References**

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#### Implementation: Input Validation and PII Redaction Pipeline

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**Implementation: Structured Output Validation with Guardrails AI**

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### Evaluation Datasets and Test Suites

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### Implementation: Building a Ragas-Based Evaluation Pipeline

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### Trade-offs: Automated vs. Human Evaluation

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### Regression Testing with Golden Sets

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### Implementation: Golden Set Management with DeepEval

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## **Adversarial and Red-Team Testing**

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### **Implementation: Automated Adversarial Prompt Generator**

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### **Trade-offs: Manual vs. Automated Adversarial Testing**

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### **Implementation: Continuous Evaluation Pipeline with Feedback Loop**

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## Chapter 5: Evaluation Frameworks: Measuring What Matters

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### Dimensions of AI Quality

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### LLM-as-Judge and Auto-Evaluation Methods

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### Implementation: Custom LLM-as-Judge Evaluator

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## **Benchmark Suites and Standardized Evaluations**

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### **Trade-offs: Benchmark Scores vs. Real-World Performance**

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### **Implementation: Modular Evaluation Pipeline**

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### **Implementation: Quality Scorecard with Trend Tracking**

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## **Trade-offs: Aggregation Methods for Multi-Dimensional Scores**

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## Chapter 6: Guardrails, Safety, and Governance

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## Chapter 9: Real-World Case Studies

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### Case Study 1: Enterprise AI Copilot (Internal Tooling)

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#### Implementation: Repository Structure for Agent-First Development

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#### Results and Lessons Learned

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### Case Study 2: Customer-Support Chatbot (Public-Facing)

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## **Case Study 3: AI-Powered Search and RAG System**

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### **Evaluation: RAGAS Metrics and Human Baselines**

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### **Key Takeaways from RBC Arcane**

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### **Case Study 4: Autonomous Agent Workflow (Multi-Step Reasoning)**

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### **Architecture: Specialized Agent Factory**

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### **Implementation: Token Cost Tracker**

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### **Build vs. Buy Decision Matrix**

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### **Team Structure Recommendations by Organization Size**

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### **Vendor Lock-In Risk Assessment**

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### **ROI Framework for Harness Engineering**

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## **Skills Roadmap for Aspiring Harness Engineers**

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#### Principle 11 (Implicit): The Harness Is a Living System

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### What We Have Learned About Building with Uncertainty

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