Experimental Progression: From Statistical Learning to Architectural Enforcement
Comprehensive Comparison of Five Approaches to Factual Grounding

Legend:
- Baseline (No Grounding)
- Fine-Tuning (Statistical)
- RAG (Embedding-based)
- Graph-RAG (Licensing Oracle)

Statistical Learning

Baseline (No Grounding)

Architectural Enforcement

- Gemma-3-4B Baseline: 16.7%
- Gemma Factual FT: 8.5%
- Gemma Abstain FT: 8.6%
- Gemini Baseline: 50.1%
- RAG Embedding: 89.5%
- Graph-RAG Oracle: 89.1%

Degradation

+39.4pp Context Provision

Y-axis: Accuracy (%)