# Vendor-Agnostic RAG + Agentic AI Capability Matrix

| Category | Description | Agentic Behaviours | Autonomy Level | Example Use Cases |
|---|---|---|---|---|
| Self-Learning RAG | Continuously updates retrieval corpus or strategy from feedback | Monitors outcomes, re-indexes data, tunes search parameters | High | Domain knowledge that evolves daily (e.g., regulations, news) |
| Tool-Calling RAG | Invokes external APIs/tools during retrieval or synthesis | Decides which tool to use, when to enrich data | Medium–High | Fact verification, currency conversion, data transformations |
| Multi-Turn Agentic RAG | Maintains context across turns and retrieves accordingly | Chooses retrieval scope per turn | Medium | Conversational assistants, research bots |
| Autonomous Orchestrated RAG | Breaks tasks into subtasks, retrieves for each step | Plans retrieval order, merges results | High | Multi-step research, legal discovery |
| Context-Adaptive RAG | Adapts retrieval method to query type and intent | Detects query class, changes retrieval backend or filters | Medium | Hybrid search systems, intent-aware customer service |
| Retrieval-Planning RAG | Creates explicit plan before retrieving | Multi-hop search, branch-and-bound reasoning | Medium–High | Complex investigative search, open-domain Q&A; |
| Multi-Modal RAG | Retrieves and fuses multiple data modalities | Decides which modality is relevant | Medium–High | Video-text Q&A;, image-aided diagnosis |
| Verification-Augmented RAG | Validates retrieved facts before output | Self-check, cross-retrieval, voting | Medium | High-stakes knowledge systems (finance, medicine) |
| Feedback-Driven Iterative RAG | Iteratively refines retrieval until quality threshold met | Self-critique and re-querying | High | Creative writing assistants, technical troubleshooting |
| Memory-Augmented RAG | Uses persistent memory plus retrieval | Balances memory recall with new retrieval | Medium | Personal AI assistants, longitudinal case tracking |
| Goal-Oriented RAG | Retrieval focused on achieving a defined objective | Prunes irrelevant search paths | Medium–High | Autonomous research agents, sales intelligence |

## Extended Attributes

| Category | Key Strength | Potential Limitation |
|---|---|---|
| Self-Learning RAG | Adaptability to changing information | Risk of model drift if feedback is noisy |
| Tool-Calling RAG | Extends capabilities beyond text retrieval | Latency and dependency on external systems |
| Multi-Turn Agentic RAG | Rich contextual understanding | Context window limitations |
| Autonomous Orchestrated RAG | Handles complex workflows | May overcomplicate simple tasks |
| Context-Adaptive RAG | Efficient matching to query type | Needs strong intent classification |
| Retrieval-Planning RAG | Structured and efficient search | Planning errors can block retrieval |
| Multi-Modal RAG | Supports richer knowledge sources | Complex fusion logic required |
| Verification-Augmented RAG | High reliability of output | Increased processing time |
| Feedback-Driven Iterative RAG | Improved final answer quality | Longer response time |
| Memory-Augmented RAG | Keeps long-term context | Risk of outdated or irrelevant recall |
| Goal-Oriented RAG | Highly targeted outputs | May miss tangential but valuable insights |