THE REAL DOSE

A PRACTICAL DISPATCH ON AI · NO HYPE · JUST WHAT WORKS

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Getting Started with AI:
The Backends That Actually Power Everything

BY THE AI2LIFE TEAM · FIRST IN A SERIES ON BUILDING REAL SYSTEMS

Most people still think "using AI" means opening a chat window. That was 2023. In 2026 the real work happens one layer down — at the backend. Whether you are shipping a product, automating research, or just trying to stop paying $200 a month in API bills, the model you talk to is only as useful as the infrastructure that serves it. This first issue of The Real Dose walks through the major backends that matter right now, what each one is actually good for, and how to choose without the usual marketing fog.

THE CLOUD GIANTS

These are the systems most people meet first. You send a prompt over HTTPS; a frontier model answers. Simple. Expensive at scale. Extremely capable.

OpenAI still owns the broadest ecosystem. GPT-5.6 family models (Sol, Terra, Luna) remain the default for agentic coding and tool-heavy workflows. The API is mature, the documentation is excellent, and almost every third-party tool speaks OpenAI's format. Cost is the tax you pay for that convenience.

Anthropic currently leads pure intelligence benchmarks with the Claude 5 series (Opus, Fable, Mythos). If your work is hard reasoning, long-context analysis, or careful writing, Claude is usually the strongest choice. Tool use reliability is class-leading. Price is premium.

Google Gemini wins on value and multimodality. Gemini 3.x models give you massive context windows and solid performance at lower token prices. Flash variants are fast enough for high-volume work. The free tier remains the most generous entry point.

xAI / Grok sits in an interesting middle ground: strong real-time knowledge (especially anything that touches X), competitive pricing, and a personality that is less filtered than the others. Useful when you want speed of information over maximum polish.

Cloud backends shine when you need frontier capability, zero infrastructure, or rapid iteration. They become painful the moment your volume climbs or your data cannot leave the building.

GOING LOCAL

Local backends run on hardware you control. No per-token bill. Data never leaves the machine. Latency is measured in milliseconds once the model is loaded.

Ollama is the default starting point in 2026. One install command, one `ollama run` later, and you have an OpenAI-compatible API on port 11434. It handles model downloads, quantization, and GPU offload automatically. Perfect for developers who want to script and integrate.

LM Studio is the gentler door. A polished desktop app lets you browse models, chat, and spin up a local server without touching a terminal. Ideal if you are still exploring what "good enough" looks like for your tasks.

Under both of them sits llama.cpp — the high-performance C++ engine that made consumer hardware viable. Most local tools wrap it. If you need maximum control or exotic quantization, you drop down to the engine itself.

Local models in the 12–27B range (Phi-5, Gemma 4, Mistral Small, Qwen3.6) now handle the majority of everyday coding, summarization, and RAG work at 90%+ of frontier quality. The gap is real but narrower than most marketing claims.

The trade-off is hardware. A modern laptop with 16–32 GB RAM is enough to start. Serious multi-user or large-context work still wants a workstation GPU.

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PRODUCTION & SELF-HOSTED

When local experimentation turns into a service that other people (or other processes) depend on, you graduate from Ollama to purpose-built inference servers. These systems are designed for throughput, continuous batching, and multi-user load.

vLLM

The current production standard for serving large open-weight models. Continuous batching, PagedAttention, broad model support, and high tokens-per-second on NVIDIA hardware. Most teams running serious open-source inference land here first.

SGLang

Strong alternative when your workload is agent loops, structured generation, or Mixture-of-Experts models. Excellent control flow over LLM calls and competitive throughput.

TensorRT-LLM

NVIDIA's own stack. Highest peak performance on NVIDIA GPUs if you are willing to invest in the more complex build and conversion process.

Hugging Face TGI / TEI

Text Generation Inference and Text Embeddings Inference. Clean integration with the Hugging Face ecosystem. TEI is particularly strong for embedding and reranker fleets.

LocalAI & Others

LocalAI aims for a drop-in OpenAI-compatible multi-model server. Convenient when you want one process to host text, image, and audio models together. NVIDIA Dynamo-Triton handles heterogeneous fleets at true enterprise scale.

THE REAL CHOICE FRAMEWORK

Ask four questions before you commit:

1. Data sensitivity? If the data cannot leave your network, local or self-hosted is non-negotiable.

2. Volume? Below a few million tokens a month, cloud is usually cheaper and simpler. Above that, the economics flip hard toward owned hardware.

3. Latency & offline? Local wins both.

4. Capability ceiling? For the hardest 10–20% of tasks, frontier cloud models still lead. Hybrid routing (local for the common path, cloud for the hard cases) is the pragmatic pattern most serious builders adopt.

Practical note: Start measuring your own token volume and quality gap this week. Most people overestimate how often they need the absolute frontier model and underestimate how much of their workload a well-chosen 14–27B local model can already handle cleanly.

> *"The model is not the product. The reliable, measurable, cost-controlled system that delivers the model is the product."*
>
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YOUR FIRST REAL STEPS

01 Install Ollama (or LM Studio if you prefer a GUI). Pull a 12–14B model. Chat with it for a day. Feel the difference between local and cloud latency.

02 Point one existing script or tool at the local OpenAI-compatible endpoint. Change one environment variable. Confirm everything still works.

03 Measure. How many tokens do you actually use in a typical week? What is the quality gap on your real tasks? Write the numbers down.

04 Decide your hybrid line. Route the high-volume, good-enough work to local. Keep the frontier cloud key for the hard 15%.

05 Only after the above: explore production servers (vLLM, SGLang) if you are serving other users or need serious throughput.

QUICK REFERENCE

- Cloud = frontier power + convenience. Local = cost + privacy + offline.
- Ollama / LM Studio = start here this week. vLLM / SGLang = when you serve others.
- Hybrid is the grown-up pattern: local for 80%, cloud for the hard 20%.
- Measure your real tokens and quality gap before you spend more money or time.

What comes next

Future issues of The Real Dose will go deeper: building reliable RAG pipelines, agent design that does not collapse under real load, evaluation that is not just a leaderboard screenshot, and the practical economics of running AI as a product rather than a demo. No hype cycles. Just the dose that moves the work forward.

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