**LLM FOR LAWGPT FOR KSA:  
**

**⚖️ Arabic Legal LLMs – Comparison Table**

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| --- | --- | --- | --- | --- | --- | --- |
| Model | Params | Language | Legal Accuracy / Benchmarks | Cost (Usage / Deployment) | Efficiency | Notes |
| Jais-13B | 13B | Arabic + English | ✅ High (strong on ArabicNLI, TyDiQA, QA legal tasks) | 💰 Free (open-source); Hosting ~$2–3/hr | ⚡ Efficient on A100 (40GB+ VRAM) | Best for bilingual Arabic legal apps |
| NOOR (KACST) | ~10B | Arabic only | ✅ Moderate–High (legal & religious Arabic content) | 💰 Free; Light inference cost | ⚡ Good on T4 / A10 / A100 GPUs | Built in KSA; native Arabic model |
| Falcon-7B | 7B | Multilingual (Arabic supported) | ⚠️ General accuracy; Not tuned for legal | 💰 Free; Efficient (~$1–2/hr) | ⚡ Very fast inference | Needs fine-tuning for law-specific tasks |
| AraBERT v2 | 110M | Arabic only | ✅ Strong classification (Arabic GLUE: 83%) | 💰 Free; Low GPU/CPU needed | ⚡ Super lightweight | Not a generative model; use for NER, topic classification |
| Arabic-Alpaca | 7B | Arabic only | ⚠️ Experimental legal reasoning | 💰 Free; Low-mid inference cost | ⚡ Moderate | Alpaca-tuned on Arabic; potential in legal RAG |
| GPT-4 (Closed) | 1.5T+ (est.) | All languages (Arabic OK) | ✅✅ Best reasoning + QA in Arabic law | 💰 High ($0.03–0.06 per 1k tokens) | ❌ Not efficient for large-scale deployment | Not open-source; high-quality legal understanding |
| Jais-RAG (custom) | 13B + vector DB | Arabic + English | ✅✅ Best for retrieval-based legal Q&A | 💰 Medium (infra + storage) | ⚡ Highly scalable | Combine with legal PDF/document DB |

**📊 Benchmark Highlights (on Legal/Arabic NLP Tasks)**

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| --- | --- | --- | --- | --- | --- |
| Task | Jais-13B | NOOR | AraBERT | Falcon-7B | GPT-4 |
| TyDiQA (Arabic QA) | ~82% F1 | ~75% | ~70% | ~72% | ✅ 85–88% |
| ArabicNLI | ✅ SOTA | Good | Moderate | Lower | ✅ Best |
| Arabic GLUE (Avg) | ~83% | ~80% | ✅ 83% | ~78% | ✅ 90%+ |
| Legal RAG QA | ✅✅ | ✅ | ❌ | ⚠️ | ✅✅ |
| Fatwa/Fiqh QA | ✅ | ✅ | ⚠️ | ❌ | ✅✅ |

**💰 Cost & Deployment**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Model | GPU Needed | Cloud Cost/hr | Fine-tune Cost | Inference Speed |
| Jais-13B | A100 40GB+ | ~$2.50/hr | ~$200–400 (custom legal set) | Medium |
| NOOR | T4 / A100 | ~$1.20/hr | ~$150–300 | Fast |
| Falcon-7B | A100 40GB | ~$1.80/hr | ~$200+ | Fast |
| AraBERT | CPU / T4 | ~$0.05/hr | ✅ Free (Hugging Face) | Super-fast |
| GPT-4 API | OpenAI hosted | $0.03–0.06 per 1k tokens | ❌ Closed | Medium |

**✅ Recommendations by Use Case**

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| --- | --- |
| Use Case | Recommended Model |
| Arabic legal QA chatbot | **Jais-13B + RAG** |
| Saudi law document summarization | **NOOR** or **Jais-13B** |
| Fatwa / Sharia law question answering | **NOOR** |
| Legal classification or tagging (NER) | **AraBERT v2** |
| Arabic-English legal assistant (dual) | **Jais-13B** or **GPT-4** |
| Low-cost, lightweight legal tasks | **AraBERT** or **NOOR small** |