■ FAANG-Worthy Projects Roadmap

FAANG and top-tier product-based companies seek engineers with a deep understanding of system internals, clean code, performance optimization, and architectural trade-offs. The following projects are curated to impress at this level and demonstrate deep technical capability.

- **Distributed File Storage System (Mini GDrive/Dropbox Clone):** File chunking, redundancy, metadata, concurrency, rate-limiting, chunk resume support.
- **LLM-Powered Code Review Bot:** Uses GitHub API + LLM to review code, detect issues, suggest improvements.
- **Custom Key-Value Store (Redis Clone):** Memory management, TTL, LRU eviction, AOF persistence, CLI interface.
- **AI-Powered Search Engine (Domain-Specific RAG):** Uses Faiss/Pinecone, semantic + keyword search, vector embeddings.
- **Design Your Own Load Balancer:** HTTP routing, sticky sessions, health checks, request time tracking.
- **Multiplayer Game Server:** WebSocket-based, Redis state management, leaderboard, real-time communication.
- **Custom Database Engine:** SQL parsing, indexing (B-tree), disk storage, basic optimizer.
- **Event-Driven Microservices (Uber-like App):** Kafka, service discovery, retries, observability with Prometheus/Grafana.
- **Compiler for a Simple Language:** Lexing, parsing, AST generation, bytecode or Python output.
- **Full DevOps Pipeline for GenAI App:** CI/CD, Docker, GitHub Actions, volume-mounted model serving, caching.

■ What Makes These Projects FAANG-Worthy

- System Design: Draw architecture, justify design decisions
- Testing: Write unit and integration tests
- Metrics: Track memory, speed, throughput
- Scalability: Simulate or plan for scale
- Tradeoffs: Explain your choices (e.g., Redis vs DB)
- Write-ups: Document everything clearly in README/blog