12-Month Software Architect Roadmap (FAANG-Oriented)

Month 1–2: Strengthening Core Foundations

- Advanced Data Structures & Algorithms (Leetcode 200–300 problems)
- Big-O mastery (time/space tradeoffs)
- Memory management & concurrency patterns (C++, Rust, Go)
- Distributed systems basics: CAP theorem, consensus, leader election
- Deliverables: Maintain DSA tracker, CAP vs PACELC blog, thread-safe cache project

Month 3: High-Scale Backend Patterns

- Microservices architecture (service mesh, API gateways, gRPC, REST)
- Event-driven systems (Kafka, SQS, Pub/Sub)
- Database internals (indexes, sharding, replication, consistency models)
- Deliverables: E-commerce microservice design doc, distributed queue in Go/Rust

Month 4: System Design Deep Dive

- Low-latency design (caching, load balancing, CDN strategies)
- Scalability & availability (auto-scaling, leader-follower DBs)
- Fault tolerance & resiliency (circuit breakers, retries, chaos engineering)
- Deliverables: Twitter feed + WhatsApp messaging design, blog on 99.99% availability

Month 5–6: Cloud + DevOps Excellence

- AWS mastery (EC2, Lambda, DynamoDB, S3, EKS, IAM, VPC, networking)
- CI/CD pipelines, GitOps
- Observability: Prometheus, Grafana, OpenTelemetry
- Deliverables: Deploy microservices app on AWS EKS, CI/CD with GitHub Actions + Terraform, cloud security blog

Month 7: Security & Cybersecurity Architecture

- OWASP Top 10, threat modeling & zero trust
- Identity & Access Management (OAuth2, OIDC, SAML)
- Encryption (TLS, KMS, Vault)
- Deliverables: Zero Trust design doc, RBAC/ABAC demo backend

Month 8: AI/ML Systems for Architects

- MLOps architecture (data pipelines, feature stores, deployment)
- Scaling inference (TensorRT, ONNX, GPU on Kubernetes)
- AI + security (ML-based anomaly detection)
- Deliverables: Recommender design, anomaly detection pipeline on AWS SageMaker

Month 9: Advanced Distributed Systems

- Consensus protocols (Raft, Paxos, Gossip)
- Time & ordering (Lamport, vector clocks)
- Data stores: Cassandra, CockroachDB, DynamoDB internals
- Deliverables: Raft in Go/Rust, blog on consensus challenges

Month 10: Architecture Leadership

- Writing design docs (Google-style ADRs)
- Tradeoff analysis (build vs buy, cost vs performance)
- Mentoring engineers, architecture reviews
- Deliverables: 3–4 design docs, mock review sessions, blog on tradeoffs

Month 11: FAANG Interview Prep

- DSA refresh (Blind 75 + graph/DP problems)
- System design drills (Grokking + FAANG patterns)
- Behavioral + leadership principles (Amazon LPs, Google GCA)
- Deliverables: 20+ mock interviews, refined resume for Architect/Staff Engineer

Month 12: Portfolio & Industry Positioning

- Open source contributions (Apache, CNCF)
- Public presence: blogs, talks, GitHub
- Recruiter outreach & referrals
- Deliverables: GitHub portfolio (2–3 projects), blog series 'Architect's Playbook', reach out to 30+ recruiters