FAANG Internship/Job Roadmap: Your Ultimate Refined Checklist 🚀

Target: Google Internship (Summer 2027) & Full-Time Job (Summer 2028) **Your Starting Point:** 2nd Year B.Tech IT, starting July 8th, 2025. Basic C, HTML, CSS, JS, plus Python/DSA/Cloud Udemy courses and Google Cloud Foundations are already underway.

Your existing **Udemy courses** (Angela Yu, Scott Barrett, Colt Steele) and **Love Babbar's DSA playlist** remain **excellent foundational resources**. They provide the theoretical groundwork. However, as discussed, they are **not enough on their own** for interview readiness and real-world application. You will need to aggressively supplement them with:

- **Intensive LeetCode practice** (the single most critical component for FAANG coding interviews).
- **Hands-on project building** (applying what you learn to create tangible products).
- **Dedicated System Design study** (crucial for mid-level and increasingly for entry-level FAANG roles).
- **Cloud-specific hands-on labs and certifications**.
- **DevOps tool-specific learning and practical implementation**.
- **Mock interviews** to hone your performance under pressure.

This integrated plan leverages your strengths and focuses on the most impactful activities for your FAANG goal.

Year 2 (July 2025 - May 2026): Foundation & Core Skill Building

Certifications:

- [ ] **Sept - Oct 2025: Google Cloud Digital Leader** (Foundational Cloud Understanding).

Core Learning & Projects (Choose ONE project from each quarter):

- **Q3 2025 (July - Sept): Core Python, Command Line & Early SQL**
    - [ ] Complete **"Google Cloud Computing Foundations: Cloud Computing Fundamentals"** course.
    - [ ] Start **Dr. Angela Yu's "100 Days of Code: The Complete Python Pro Bootcamp."** Dedicate at least 1-2 hours daily.
    - [ ] **Set up GitHub:** Learn basic Git commands (commit, push, pull). Start making small, organized commits daily as you learn Python.
    - [ ] **LeetCode Profile:** Create an account. Just browse, don't worry about solving yet.
    - [ ] **Project 1: Advanced Password Manager CLI:**
        - **Concept:** A robust command-line password manager. Stores encrypted passwords in a local file/SQLite DB. Allows generation of strong passwords, retrieval, and categorization.
        - **Skills:** Python (file I/O, encryption/decryption, argument parsing), SQLite, basic security concepts.
    - [ ] **Project 2: Smart File Organizer:**
        - **Concept:** A CLI tool that automatically organizes files in a directory based on type, date, or custom rules. Moves files, renames them, can handle duplicates.
        - **Skills:** Python (os module, shutil, pathlib, regex), command-line arguments.
- **Q4 2025 (Oct - Dec): Backend & Database Integration (SQL Focus)**
    - [ ] Continue **Dr. Angela Yu's Python course.** Aim to complete Modules 1-10 (core Python).
    - [ ] Start **Scott Barrett's "Python Data Structures & Algorithms + LEETCODE Exercises."** Focus on understanding fundamental concepts.
    - [ ] **LeetCode Practice:** Start solving **EASY** LeetCode problems (1-2 per day). Focus on the "Top Interview Questions" list. Python is your primary language for solving.
    - [ ] **Linux Basics:** Get comfortable with basic Linux commands (ls, cd, mkdir, touch, cp, mv, rm). Use a virtual machine or WSL if on Windows.
    - [ ] **OOP in Python:** Ensure you deeply understand Object-Oriented Programming principles (Encapsulation, Inheritance, Polymorphism, Abstraction).
    - [ ] **Project 1: Simple REST API with Database Integration (e.g., Book/Movie Catalog API):**
        - **Concept:** Backend API using Python Flask. Allows adding/retrieving/updating/deleting (CRUD) items (e.g., books, movies) from a **PostgreSQL/MySQL database**. Focus on solid API design and database interaction. No frontend needed, interact via Postman.
        - **Skills:** Python Flask, PostgreSQL/MySQL, SQLAlchemy (ORM), REST API design, basic error handling.

    - [ ] **Project 2: Basic User Authentication System API:**
        - **Concept:** Backend API for user registration, login, and simple profile management. Implement user authentication (e.g., basic JWT or session-based).
        - **Skills:** Python Flask, PostgreSQL/MySQL, secure password hashing, JWT/session management.
- **Q1/Q2 2026 (Jan - May): Deeper Backend & Prep for Cloud Deployment**
    - [ ] Continue **Scott Barrett's DSA course.** Move into Trees, Graphs, Recursion, Sorting/Searching algorithms.
    - [ ] **LeetCode Practice:** Increase to 2-3 **EASY/MEDIUM** problems per day. Review solutions and different approaches.
    - [ ] **Database Fundamentals (SQL):** Complete an online course (e.g., "SQL for Data Science" on Coursera, or a good Udemy course). Practice writing complex queries (joins, subqueries).
    - [ ] **Project 1: Expand a Q4 project:** Take your chosen Q4 backend project and add more features, improve error handling, implement logging. Make it more robust.
    - [ ] **Project 2: Develop a Web Scraper/Data Aggregator:**
        - **Concept:** A Python script that scrapes data from a few websites (e.g., news headlines, product prices) and stores it in your database, exposed via a simple Flask API.
        - **Skills:** Python (requests, BeautifulSoup/Scrapy), Flask, database integration.

Yearly Goals (End of Year 2 - May 2026):

- [ ] **Strong Python Foundation:** Confident in core Python, OOP.
- [ ] **DSA Fundamentals:** Solid understanding of basic to intermediate data structures and algorithms.
- [ ] **Proficient in Git & GitHub:** All your code is on GitHub.
- [ ] **Basic Linux Command Line Skills**.
- [ ] **At least 2-3 solid GitHub projects:** Including a Python Flask backend API with database integration.
- [ ] **~100 LeetCode Easy/Medium problems solved**.
- [ ] **Basic SQL proficiency and experience with a database project**.

Year 3 (June 2026 - May 2027): Specialization, Cloud, DevOps & Internship Prep

Certifications:

- [ ] **Q3 2026 (July - Sept): Google Associate Cloud Engineer** OR **AWS Certified Solutions Architect - Associate**(Choose one based on your cloud focus).
- [ ] **Q1 2027 (Jan - Mar): HashiCorp Certified: Terraform Associate** (If you're enjoying IaC).

Core Learning & Projects (Choose ONE project from each quarter):

- **Q3 2026 (July - Sept): Containerization, Initial Cloud Deployment & IaC Preview**
    - [ ] **Intensify DSA Practice:** Continue LeetCode (mostly MEDIUM, some HARD). Aim for ~200-300 problems solved total by end of this period.
    - [ ] **System Design Introduction:** Start learning basic System Design concepts (scalability, load balancing, caching, microservices). Resources: Gaurav Sen's YouTube series, "Grokking the System Design Interview" (Educative.io).
    - [ ] **New: Terraform Basic Hands-on Lab (1 week):** Write a simple `terraform apply` for EC2/S3/IAM locally. This early exposure will make Q4's full IaC project easier.
    - [ ] **Project 1: Containerize & Deploy Your Backend on Cloud VM:**
        - **Concept:** Take your most complex backend project from Year 2. Containerize it with **Docker**. Deploy this Dockerized application to a Virtual Machine (VM) on your chosen cloud (e.g., Google Compute Engine, AWS EC2). Set up basic networking.
        - **Skills:** Python, Docker, Cloud VMs, Linux server management (SSH, basic commands).
    - [ ] **Project 2: Simple Serverless Web App:**
        - **Concept:** Build a lightweight web application or API entirely using serverless functions. Example: A simple "contact us" form that sends an email via a serverless function, or a URL shortener backend using serverless.
        - **Skills:** Python, AWS Lambda/GCP Cloud Functions, API Gateway, DynamoDB/Firestore.
- **Q4 2026 (Oct - Dec): CI/CD, Kubernetes & Observability**
    - [ ] **Project 1: Automated Deployment Pipeline (CI/CD) for your Containerized Backend:**
        - **Concept:** Set up a CI/CD pipeline (e.g., **GitHub Actions**, GitLab CI/CD) that automatically builds, tests, pushes your Docker image to a container registry (Docker Hub, ECR/GCR), and deploys it to your cloud VM.
        - **Skills:** Docker, CI/CD tool (GitHub Actions), basic shell scripting, cloud deployment commands.
    - [ ] **Project 2: Multi-Service Application with Kubernetes (Basic Deployment):**
        - **Concept:** Take a previous backend project (or a new small one) and split it into 2-3 mini-services. Containerize each. Deploy them to a **basic Kubernetes cluster** (e.g., a local Minikube, or a small GKE/EKS cluster if comfortable). Focus on Pods, Deployments, and Services.

        - **Skills:** Docker, Kubernetes fundamentals, Cloud Kubernetes Service (GKE/EKS/AKS).
    - [ ] **New: Infrastructure as Code (IaC) Provisioning Project:**
        - **Concept:** Use **Terraform or Pulumi** to provision a complete, small cloud environment. E.g., provision an EC2 instance (or GCE VM), an S3 bucket (or Cloud Storage bucket), and necessary IAM roles/service accounts. Automate the deployment of this infrastructure using **GitHub Actions**.
        - **Skills:** Terraform/Pulumi, Cloud Provider (AWS/GCP), IAM, GitHub Actions.
    - [ ] **New: Monitoring & Observability Lab/Project:**
        - **Concept:** Implement basic monitoring for one of your deployed applications. Use **Prometheus + Grafana** (self-hosted or in-cluster) or utilize cloud-native tools like **AWS CloudWatch logs + alerts**(or GCP Cloud Monitoring/Stackdriver).
        - **Skills:** Prometheus, Grafana, CloudWatch/Cloud Monitoring, alerting, logging.
- **Q1/Q2 2027 (Jan - May): System Design & Interview Readiness**
    - [ ] **Intensive Interview Prep:** Focus on mock interviews (coding, system design basics, behavioral).
    - [ ] **Mock Interviews:** Start practicing coding and behavioral mock interviews on platforms like **Pramp or Interviewing.io**. Consider organizing a peer group using Excalidraw + Discord if premium options are not available.
    - [ ] **Review all CS Fundamentals:** OS, Networking, Databases, OOP.
    - [ ] **Behavioral Interview Prep:** Prepare answers using the STAR method for common questions ("Tell me about a time you failed," "Tell me about a challenging project").
    - [ ] **New: Resume Optimization:** Create an **ATS-optimized, keyword-rich** resume tailored for target roles.
    - [ ] **New: LinkedIn Optimization:** Update LinkedIn with **featured projects, pinned GitHub repo, and seek skill endorsements.**
    - [ ] **New: Alumni Outreach & Referrals:** Start connecting with alumni and sending cold emails to seek referrals.
    - [ ] **Start Applying for Summer 2027 Internships!** (Application period typically opens from August/September of the previous year through December/January). Apply broadly to Google, Amazon, Microsoft, Adobe, all major product companies.
    - [ ] **Optimize Existing Project:** Performance tune, add robust error handling, implement caching (Redis/Memcached).
    - [ ] **Document Architecture:** Create diagrams (UML, flowcharts) for your most complex project, explaining design choices, scalability considerations.
    - [ ] **System Design Deep Dive:** Practice whiteboard system design problems regularly. Resources like Gaurav Sen's YouTube series, "Grokking the System Design Interview" (Educative.io), and ByteByteGo are excellent.
    - [ ] **Create and Maintain a DevOps Portfolio Repository:**
        - **Concept:** A single GitHub repository or Notion hub dedicated to showcasing your best projects.
        - **Content:** Include: **Architecture diagrams**, direct links to code, clear setup/deployment instructions, CI/CD status badges, and

screenshots/demos. This is crucial for HR/recruiters/hiring managers to quickly grasp your capabilities.

Yearly Goals (End of Year 3 - May 2027):

- [ ] **Advanced DSA Skills:** Comfortable with most LeetCode Mediums, attempting Hards.
- [ ] **Cloud Certified (Associate Level):** One professional cloud certification (GCP Associate Cloud Engineer or AWS SAA-Associate).
- [ ] **Docker & CI/CD Proficiency:** Able to containerize and automate deployments.
- [ ] **1-2 Major End-to-End Projects:** Backend web app deployed on cloud with CI/CD.
- [ ] **Internship Secured (Summer 2027):** This is the **primary goal** for Year 3. Even if not FAANG, a good product company internship is invaluable.
- [ ] **Well-documented DevOps portfolio.**

Year 4 (June 2027 - May 2028): Full-Time Job Acquisition

Certifications:

- [ ] **Q3 2027 (July - Sept): Certified Kubernetes Application Developer (CKAD)** (If aiming for SRE/DevOps roles specifically).

Projects & Job Prep:

- [ ] **June - August 2027:**
    - [ ] **Complete Summer Internship (if secured).** Excel at it, learn as much as possible, network. Aim for a return offer.
    - [ ] **Post-Internship Review:** Update resume with internship experience. Identify skill gaps.
    - [ ] **Intensive System Design Practice:** This becomes more critical for full-time roles. (Educative.io, ByteByteGo, YouTube).
- [ ] **September - November 2027:**
    - [ ] **Full-Time Job Applications:** Google usually opens applications for new grads around September/October. **Apply early!**.
        - **Google Careers Page:** careers.google.com/jobs/ (Filter by "University Graduate" or "Entry Level").
    - [ ] **Mock Interviews (All Types):** Coding, System Design, Behavioral. Practice articulating your thoughts.
    - [ ] **Continue to build/improve a significant project** if you don't have an internship project to showcase.
- [ ] **December 2027 - May 2028:**
    - [ ] **Interviewing Phase:** Be prepared for multiple rounds. Stay persistent.
    - [ ] **Negotiation:** If you get offers, understand how to negotiate.
    - [ ] **Network:** Connect with recent graduates from your college or region who got into product companies. Learn from their experience.

Yearly Goals (End of Year 4 - May 2028):

- [ ] **FAANG/Top Product Company Job Offer** (or a strong backup offer).
- [ ] **Highly polished System Design skills**.
- [ ] **Exceptional interview performance skills**.

Google Kickstart & Google Summer of Code (GSOC) Preparation (Integrated):

These are fantastic avenues to get noticed by Google.

- **Year 2 (July 2025 - May 2026):**
    - [ ] **Focus:** Your core learning (Python, Git/GitHub mastery, solid DSA fundamentals via Scott Barrett, Love Babbar, and initial LeetCode practice) is your preparation.
    - [ ] **Kickstart:** You can try participating in a Kickstart round in **early 2026 (Jan-May)** just to get a feel for it. Don't worry about performance, just observe the process.
- **Year 3 (June 2026 - May 2027):**
    - [ ] **Kickstart:** Actively participate in **all available Kickstart rounds.** Aim for good scores. Use past problems for practice.
        - **How:** Solve past Kickstart problems, read editorials, practice timed LeetCode contests.
        - **Link:** codingcompetitions.withgoogle.com/kickstart/past-competitions.
    - [ ] **GSOC:**
        - [ ] **Early June 2026 - Feb 2027: This is crucial.** Identify potential open-source organizations/projects. Start making **small, meaningful contributions** (bug fixes, documentation, "good first issues"). Engage with their community on mailing lists/Discord.
        - **Link:** summerofcode.withgoogle.com/archive.
        - [ ] **March - April 2027:** Write and submit your strong GSOC project proposal.
        - **Your Target:** Aim to apply for **GSOC 2027**.
- **Year 4 (June 2027 - May 2028):**
    - [ ] **Kickstart:** Continue participation.
    - [ ] **GSOC:** If successful in 2027, complete your project. If not, re-apply for GSOC 2028 with more experience and contributions.

Your Project To-Do List (Tentative Start & Deadlines) 📝

This section summarizes all the projects you'll be building throughout your journey, with estimated timelines. This list can serve as your personal tracking sheet for your portfolio.

Project Name	Category	Start Q	Deadline Q	Status	Notes
Advanced Password Manager CLI	Core Python & Command Line	Q3 2025 (July)	Q3 2025 (Sept)	To Do	OR Smart File Organizer.
Smart File Organizer	Core Python & Command Line	Q3 2025 (July)	Q3 2025 (Sept)	To Do	OR Advanced Password Manager CLI.
Simple REST API (Book/Movie Catalog API)	Backend & Database (SQL)	Q4 2025 (Oct)	Q4 2025 (Dec)	To Do	OR Basic User Auth System.
Basic User Authentication System API	Backend & Database (SQL)	Q4 2025 (Oct)	Q4 2025 (Dec)	To Do	OR Simple REST API.
Expand a Q4 Backend Project	Deeper Backend	Q1 2026 (Jan)	Q2 2026 (May)	To Do	Iteration on a previous project. Choose this OR Web Scraper.
Web Scraper/Data Aggregator	Deeper Backend	Q1 2026 (Jan)	Q2 2026 (May)	To Do	OR Expanding a Q4 project.
Containerize & Deploy Backend on Cloud VM	Containerization & Cloud	Q3 2026 (July)	Q3 2026 (Sept)	To Do	OR Simple Serverless Web App.

Simple Serverless Web App	Containerization & Cloud	Q3 2026 (July)	Q3 2026 (Sept)	To Do	OR Containerize & Deploy Backend.
Terraform Basic Hands-on Lab	IaC Preview	Q3 2026 (July)	Q3 2026 (July)	To Do	Brief 1-week exposure to `terraform apply` locally.
Automated Deployment Pipeline (CI/CD)	CI/CD & Kubernetes Intro	Q4 2026 (Oct)	Q4 2026 (Dec)	To Do	OR Multi-Service K8s Deployment.
Multi-Service Application with Kubernetes (Basic)	CI/CD & Kubernetes Intro	Q4 2026 (Oct)	Q4 2026 (Dec)	To Do	OR Automated Deployment Pipeline.
Infrastructure as Code (IaC) Provisioning	IaC & Automation	Q4 2026 (Oct)	Q4 2026 (Dec)	To Do	New, dedicated IaC project for your portfolio.
Monitoring & Observability Lab/Project	DevOps/SRE Tools	Q4 2026 (Oct)	Q4 2026 (Dec)	To Do	Prometheus/Grafana or CloudWatch/Stackdriver.
Summer Internship Project	Real-World Experience	Summer 2027 (June)	Summer 2027 (Aug)	To Do	Crucial, high-impact project.
Significant Project Refinement / Open Source	Job Prep / Portfolio	Q3 2027 (Sept)	Q4 2027 (Dec)	To Do	If no return offer or to further enhance the portfolio.

Certifications to Target 🏅

This table outlines the key certifications, their approximate timelines within your roadmap, and where to find official information.

Certification Title	Target Timeline	Official Link
Google Cloud Digital Leader	Sept - Oct 2025	Google Cloud Digital Leader
Google Associate Cloud Engineer	Q3 2026 (July - Sept)	Google Associate Cloud Engineer
OR AWS Certified Solutions Architect - Associate	Q3 2026 (July - Sept)	AWS Certified Solutions Architect – Associate
HashiCorp Certified: Terraform Associate	Q1 2027 (Jan - Mar)	HashiCorp Certification
Certified Kubernetes Application Developer (CKAD)	Q3 2027 (July - Sept)	CKAD - Linux Foundation

Workshops & Hackathons Timeline

Timeframe	Event / Activity	Type	Platform / Join From
Aug–Sept 2025	Google Cloud Study Jam	Online Workshop	Qwiklabs, GDG Meetup
Oct–Dec 2025	DevFest India / Cloud DevFest	Conference	GDG India / devfest.withgoogle.com
Jan 2026	Google Kickstart Round 1	Coding Contest	Kickstart Site
Feb–Mar 2026	Hackathons: Smart India Hackathon, Devfolio	Hackathon	SIH, Devfolio
Apr 2026	DevOps Discord Bootcamp (KubeDaily etc.)	Workshop	Discord Servers (KubeDaily, CNCF, DevOps India)
May 2026	College-level Hackathon or Project Day	Hackathon	Tech Fest / HackerEarth / internal college event
June–Aug 2026	AWS / Azure / GCP Community Days	Offline/Hybrid	AWS UG India, Azure Developer Days
July 2026	HashiCorp Cloud Engineering Day	Online Event	HashiCorp Events
Aug 2026	KubeCon Local Watch Party + Workshop	Workshop	CNCF India, Kubernetes India Meetup
Sept 2026	Hacktoberfest + GitHub Field Day	Open Source Sprint	hacktoberfest.com
Oct–Nov 2026	Google Tech Workshop Series	Workshop	GDG India / Google India Careers

Dec 2026	Project Showcase Event (self-organized)	Demo/Portfolio	LinkedIn/GitHub Pages/Youtube
Jan–Feb 2027	GSoC Org Outreach + Early Contributions	Open Source Prep	GitHub Issues, mailing lists, Discord
Feb–Mar 2027	Resume + Interview Workshops	Career Prep	Internshala, Crio.do, Devfolio
Apr–May 2027	GSoC Proposal Finalization + Submission	GSoC Milestone	summerofcode.withgoogle.com
May–July 2027	Virtual Internship Sim Programs	Internship Sim	AWS Educate, Microsoft Future Ready Talent

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🔑 Suggestions:

- You only need to attend **3–5 major events per year**.
- Prioritize those that give:
    - **Certificates or badges**
    - **Networking (GDG, AWS UG)**
    - **Recruiter or contributor visibility (Hacktoberfest, GSoC)**
- Most are **free or cost < ₹200**.

SUMMARY

Year 2:

Python → Git → SQL → Flask API → DSA Basics

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Google Cloud Study Jam → DevFest India → Kickstart Round 1 → College/Devfolio Hackathons

Year 3:

Docker → Cloud Cert → Terraform Preview → CI/CD Pipelines → IaC + Monitoring → Kubernetes

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AWS Community Day → HashiCorp Cloud Engg Day → KubeCon Watch Party → Hacktoberfest

Year 4:

Internship → CKAD → System Design Mastery → Full-time Job

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Resume Workshop → GSoC Outreach → Internship Simulations (AWS/Microsoft)