MYAIGURU

Academy Programs | The Learning App | SM Channel

# AI Learning Solutions for Everyone

Agentic AI | Generative AI | ML & Data Science | Data Analytics | Cloud

*MYAIGURU™ is fully owned and managed consumer retail brand of S3K Technologies for its Academy Training Programs*

## AI Engineering Intern / Fresher – Shortlisting Assignment

## ROLE MINDSET

You are expected to think like an **AI Tech Architect** capable of designing and building practical AI applications using **GenAI, RAG, and Agentic AI workflows**.
This assignment evaluates your ability to **engineer**, **implement**, and **communicate** an end-to-end AI solution.

## ASSIGNMENT OBJECTIVE

You must **choose ONE** project from the list of **10 curated topics** below and build a **working, demo-able GenAI Agentic AI application** within the assignment period.
Your application must:
- Use an **LLM** (GPT, Gemini, Claude, etc.)
- Use **RAG and/or Agentic workflow orchestration**
- Include a **clean front-end UI** (Streamlit / React / Next.js)
- Have a **clear architecture** and **well-written documentation**

This is a **one-week, average to mid-complex level** AI engineering challenge designed for entry level professionals.
We would like you to demonstrate your skills in AI,
- Use Gamma for PowerPoints,
- Use Cursor for code assistance,
- Use GPT, etc. Agentic Workflow

# SECTION A — CHOOSE PROJECT TOPIC

These 10 topics represent the **full spectrum of modern GenAI & Agentic AI skills**.
Choose any one and build a practical, functional prototype.

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**1. Research Agent — Academic Research & Education**

An AI academic assistant that performs:

- Research across academic databases
- Analysis of recent papers
- Cross-disciplinary synthesis
- Well-structured summaries & citation-style reports

**Example User Prompts:**

- "Summarize recent developments in CRISPR gene editing."
- "Compare fusion energy research breakthroughs across 2023–2024."

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**2. YouTube Agent — Media & Content Analysis**

An agent that analyzes YouTube videos to produce:

- Detailed summaries
- Timestamps
- Themes/topics
- Study notes & insights

**Example User Prompts:**

- "Analyze this product review: [YouTube URL]"
- "Create revision notes from this lecture."

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**3. Finance Agent — Stock Market & Company Insights**

An AI-powered finance analyst that generates:

- Stock overview
- Key metrics (P/E, EPS, Market Cap, 52-week range)
- Analyst recommendations
- Industry trends & sentiment
- Structured tables with 📈 📉 indicators

**Example:**

"Analyze NVDA with financials, risk factors, and sector insights."

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**4. Legal Document Analysis Agent — Contract / PDF Insights**

An AI agent that processes legal PDFs/URLs and answers questions based on a legal knowledge base.

**Response Requirements:**

- Provide general information, not legal advice
- Include citations when possible
- Recommend consulting a licensed attorney for specific matters

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**5. Meeting Summarizer & Visualizer Agent — Audio AI**

A meeting assistant that:

1. Accepts an audio file
2. Transcribes using ASR
3. Summarizes key discussion points
4. Generates structured meeting minutes
5. Produces an audio summary from the minutes

### 6. Customer Support Agent — Multi-Intent Workflow Bot

A domain-specific customer support agent (airlines, e-commerce, SaaS, travel, etc.) with features like:

- User query handling
- Guided support flows
- Automated FAQ responses
- Optional tool actions (booking search, pricing lookup)

### 7. SQL Data Analyst Agent — NLQ + Query Execution

An agent that answers questions by interacting with a SQL database:

- Determines relevant tables
- Writes SQL queries
- Executes queries
- Fixes errors
- Generates visualized outputs

**Example:** "Show top-selling products by month and generate insights."

### 8. Multi-Modal AI Agent — Image + Text Understanding

A VLM-based agent capable of analyzing images such as:

- Receipts
- Lab reports
- Product images
- Graphs & charts

Capabilities:

- Extract text & metadata
- Interpret content
- Provide insights & Q&A

### 9. Personal Productivity Agent — Tasks, Emails, Calendar Automation

An agent that acts as an AI Executive Assistant:

- Reads calendar (sample data)
- Summarizes the week
- Generates tasks
- Drafts emails
- Creates daily planning summaries

### 10. Data-to-Insights RAG Agent — Enterprise Analytics Assistant

Upload CSV/Excel → The agent performs:

- Data cleaning
- Exploratory analysis

- Charts visualizations
- RAG-based Q&A on top of the dataset
- Insight report generation

**Use Cases:** Sales insights, HR analytics, operational analytics.

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**11. Your AI Use Case – Be Creative**

# SECTION B — TECH REQUIREMENTS

You may use any combination of the following:

**Agent Frameworks (Recommended)**

- CrewAI
- Agno
- LangGraph
- LangChain
- LlamaIndex

**Frontend (Choose One)**

- Streamlit
- React
- Next.js

**Backend / Utilities**

- Python / Node.js
- Vector DB: Chroma / Pinecone / PostgreSQL + pgvector
- LLM: OpenAI / Gemini / Claude / Groq

**UI**

A clean UI is expected.

A **Figma template** is provided; you may adapt it.

https://stamp-effort-95251517.figma.site

# SECTION C — MANDATORY DELIVERABLES

Your submission must include **all 4 components**:

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## 1. Working / Demo-able Application

- Live demo link **OR** screen-recorded demo video

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## 2. Code Walkthrough

Either:

- A recorded walkthrough video (5–10 minutes), or
- A written walkthrough document
- <mark>**Demo-able Application & Code Walkthrough can be one SINGLE video**</mark>

Must explain:

- Architecture
- Tech stack
- Agent / RAG workflow
- UI design
- How you would extend the solution

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## 3. Gamma Presentation (PowerPoint alternative)

Your Gamma deck must include:

1. Application Overview
2. Problem Statement & Target User
3. Architecture Diagram
4. Frameworks & Components Used
5. Implementation Tips (Cursor, Copilot, Debugging)
6. Conclusion & Future Enhancements

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## 4. Email Submission Package

Your final email should include:

- Gamma presentation link or PDF
- Demo video or deployed link
- Any credentials or instructions required to run locally

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# SECTION D — EVALUATION CRITERIA

You will be evaluated on:

**1. Functional Quality**

Working prototype, stability, correctness of responses.

**2. Architecture & Engineering Approach**

Modularity, clarity, ability to scale, RAG/agent structure.

**3. Code Quality**

Organization, comments, readability, best practices.

**4. User Experience (UI/UX)**

Clear flow, simple, neat, professional.

**5. Communication & Documentation**

Quality of Gamma deck, walkthrough, and README.

**6. Originality & Problem-Solving**

How thoughtfully you chose and executed your topic.

# SECTION E — SUBMISSION DETAILS

- **Deadline: 24 November, 6:00 PM EST**
- **Email To:** hr@s3ktech.ai
- **CC: Bhushan Ghadiali**
- **Subject Line:**
  **AI Engineering | <Your Full Name> | <Project Name>**

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