Take-Home Challenge | AI Engineer

INTRODUCTION 📖

This challenge will allow you to showcase your skills, strategic thinking and technical ability by completing a technical challenge or presentation.

You will present this task to Aman Arora, Lead AI Engineer, and Satya Borgohain, AI Engineer so we can learn more about how you perform in your craft and you can get a feel for the type of work you'd be doing.

WHAT TO EXPECT 📄

During the interview, you will be asked probing questions to test your understanding and to give you the chance to demonstrate your ability. The structure of the meeting will be;

- 30 minutes presentation
- 20 minutes Q&A and;
- 10 minutes for you to ask any further questions.

PRESENTATION FORMAT 💻

You can present this back in any format you choose. Most commonly we see Google Slides/Powerpoint presentations, however we encourage you to use the format that is most comfortable to you.

SUBMISSION GUIDELINES 📧

Please send through your presentation to tao@relevanceai.com at least 3 hours prior to your interview commencing.

ASSESSMENT RUBRIC ✅

Assessment Attributes	**Weighting**
Ability to write good code	40%
Ability to learn new concepts	30%
Ability to research and bring scientific evaluation to models/ processes	30%

CONTEXT & ADDITIONAL INFORMATION 🧠

The goal is to assess your ability as an AI engineer to code and evaluate machine learning pipelines.

You will utilise the following datasets:

https://www.nrma.com.au/sites/nrma/files/nrma/policy_booklets/nrma-car-pds-1023-east.pdf

https://www.allianz.com.au/openCurrentPolicyDocument/POL011BA/$File/POL011BA.pdf

TASK 📝

Your task is to create at least 2 different RAG pipelines (1 agentic rag, 1 rag) for the provided data, and then compare and evaluate the performance between the pipelines.

1. Create the retrieval frameworks. i.e. could be hybrid search vs vector search. vector search using Openai embeddings vs Cohere embeddings
2. Create the generation frameworks. i.e. could be out of the box GPT vs fine tuned Mistral.
3. Create the agentic frameworks to call the RAG pipelines.
4. Create an evaluation framework to compare and evaluate the performance between the pipelines.

Ideal frameworks to utilise:

- Hugging Face
- LangChain
- LlamaIndex
- NumPy
- PyTorch, etc.

Tips:

- Write production-quality code. This means using **.py** files with a clear folder structure rather than Jupyter notebooks.
- Submit your work via **GitHub repository** or a **compressed folder of code files**.

Recommended time allocation to complete: 2 hours

END DELIVERABLE 👍

- Functional RAG pipelines with clear documentation.
- A structured, well-written codebase following best practices.
- A performance comparison between different retrieval and generation strategies.
- A well-thought-out evaluation framework.

POINT OF CONTACT ❓

If you have any questions during the preparation of your challenge, please reach out to tao@relevanceai.com

Good luck! We're looking forward to your presentation!