

ALMA (Take Home Assignment)

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Assignment Task

Build a LLM based system that accepts a job posting text and a resume text and generates a cover letter.

Background Research & Approach

What is a cover letter?

A cover letter is a document that accompanies your resume when you apply for a job. It's your first opportunity to introduce yourself to a potential employer, highlight your qualifications, express your interest in the position, and make a great first impression.

General Anatomy of a Cover Letter

- Opening Salutation to the HM or Recruiter
- Introduction Paragraphs – it should catch the reader's attention, introduce yourself, and state the purpose of the letter.
- Body Paragraphs - it should highlight your qualifications, skills, and experiences that make you a good fit for the job.
- Closing remarks - should express your interest in the job, thank the employer for considering your application, and propose the next steps.
- Call to Action

Dos and don'ts in a Cover Letter

1) Do's

- a. Provide clear and relevant information that convinces employer to take your application forward.
- b. Customize it to each employer and the job description.
- c. Understand company's mission, values, and culture.
- d. From the job description, identify key responsibilities & requirements.
- e. In the body, mention your most relevant qualifications, skills, and experiences.
- f. Focus on how you can add value to the company.
- g. It is important to remember it is a **two-way street. How will the company benefit from your experience?**
- h. Use a professional, business oriented engaging tone with positive outlook.
- i. In the body, you can focus on metrics which shows your ability to produce results/revenue to the company.
- j. Make sure to highlight technology or skills that are directly present in your resume and the job description.

2) Don'ts

- a. Avoid unnecessary jargon.
- b. Avoid lengthy descriptions.
- c. Avoid generic first liners example – I am applying for the job posted on your website, etc.
- d. Avoid Grammatical errors, typos, or poor formatting.
- e. Don't overuse point number k in Things to Focus

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Personalization

HR research states that it is important to make the cover letter **personalized** to the exact job position, and the company.

- a. If you know the hiring manager's or recruiter's name, address the letter to that person.
- b. If someone referred you, it's good to mention as it brings more legitimacy.
- c. Mention something specific that the company has done which resonates with you, example – a product launch, or an open-source repository.
- d. Length of the cover letter: Different companies might have different length limits for cover letters.
 - i. Research states that cover letters should not be more than **“400 words”**.
 - ii. However, depending on the context, the user might want a longer or a shorter cover letter.

Product Implementation

Tech Stack

1. Python
2. GPT-3.5 Turbo
3. LangChain Framework
4. Streamlit for Deployment
5. GitHub for Versioning

Product Features

1. Ingest a PDF resume.
2. Ingest a Job Description
 - a. Via Text
 - b. Via Job Listing URL
3. Hiring Manager or Recruiter's Name?
4. Did some refer you?

Using the inputs from 1 to 4, we generate the cover letter as response.

Response

5. Cover Letter (Personalized)
6. Copy it to clipboard.

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Technical Decisions

A. Why GPT3.5 Turbo?

Considering the time constraint of 12 hours, it felt like GPT3.5 Turbo would be a wise choice to make because of the following reasons:

- **Cost Effective**
 - o Input: \$0.0015 / 1K tokens
 - o Output: \$0.002 / 1K tokens
- Research states that, when fine-tuned, GPT3.5 Turbo can "match, or even outperform" GPT-4-level capabilities on "certain narrow tasks." [\[Link\]](#)
- In terms of response time, this model is also **faster**.
- As the free version of ChatGPT is powered by this model and is considered **useful** because of the daily active users and traction, it was logical to prototype the system using this model.

B. Why not open-source models?

Open-source models should also be explored as they are transparent, cost-effective, customizable, and flexible. However, to maintain simple access to this prototype, I chose to rely on closed source LLM for quicker development and deployment.

C. Why did I rely on prompt engineering?

In practice, the below graph by [Heiko Hotz](#) summarizes perfectly the general decision-making path in LLM application building.

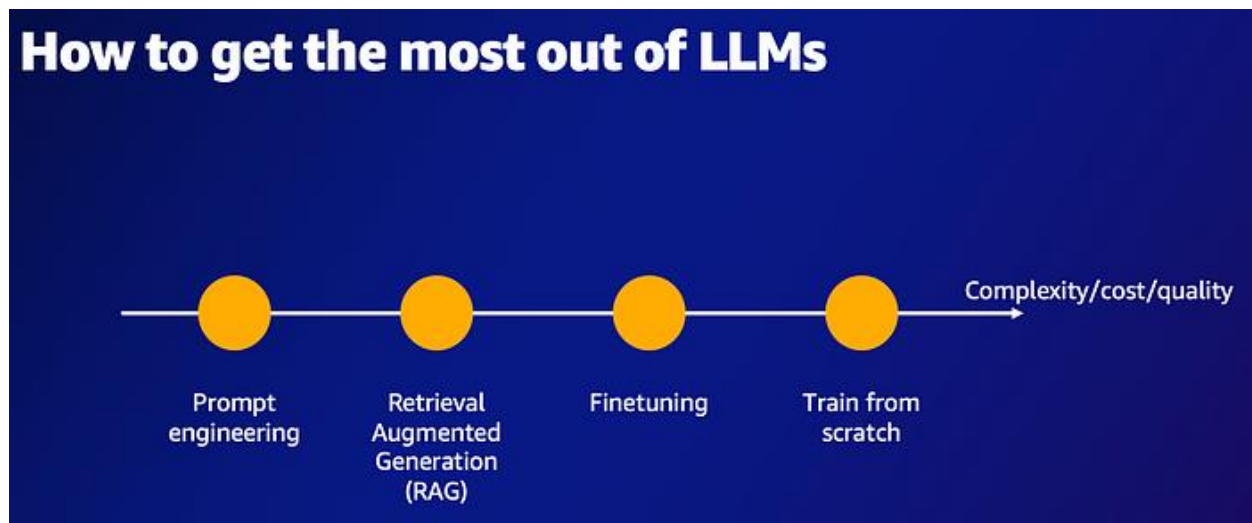


Figure 1 Decision Making in LLM Applications

This diagram holds truth when we assume cost, effectiveness, and complexity are represented in a single dimension. However, research showcases that all these approaches are in fact *orthogonal*, and

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not *co-linear*. This is mainly because each approach is meant to serve different requirements within a LLM application.

Next Steps or Future Direction

1. Better Resume Parsing (PDF to Text)
2. Prompt Optimization
3. Introducing a HR persona. This will help the LLM think in terms of a HR person's hat or hiring manager hat.
4. Fine-tuning
 - a. We might want to modify the model's behavior, or writing style (say make it more persuasive, concise, convincing, or professional).
 - b. We also might want to infuse some domain-specific knowledge (say technology domain)
 - c. Hence, **fine-tuning + prompt engineering** might help us achieve specific nuances, tones, or terminologies.
5. Taking in more features to aid the prompt templates.
 - a. Did the applicant work with the referrer? This increases the legitimacy and makes a strong case.
 - b. Does the applicant want to highlight any specific project or experience? Ability to focus attention.
 - c. Attaching hyperlinks to social media channels.
6. **A cover letter should not be a descriptive version of the resume, but it should cover the background context or stories that the resume cannot cover.**
 - a. For this, we will have to introduce a paradigm where the applicant can tell stories latent within "between the lines".
7. Length of the cover letter

Evaluation of Current System

1. **Hallucination** (Ability to make up content with confidence, not present in the context or prompt)
2. Susceptible to mentioning everything from the resume as is. "The purpose of cover letter is to highlight background stories and use facts to convince the recruitment team."
3. It misses out on Awards & Extra Curricular activities even though they are relevant to the job description.
4. The length of the cover letter generated needs to be controlled.

References

1. <https://www.linkedin.com/pulse/only-cover-letter-guide-youll-need-2020-successful-tom%C3%A1%C5%A1-ondrejka/>
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3. <https://careercenter.lehigh.edu/sites/careercenter.lehigh.edu/files/Cover%20Letter%20FINAL.pdf>
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