# Project in Maths Modelling:

*ResuBot- Your Career, Perfectly Told.*

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# Introduction

The introduction of artificial intelligence into the interview process is an added opportunity for the evolution of recruitment and talent acquisition functions. This paper presents a novel AI powered interview bot to expedite the pre-interview evaluations. By parsing a resume uploaded by an interviewee, the bot extracts useful data and creates a more intelligent reply to a sequence of questions by an interviewer.

This AI solution looks to deliver a holistic view of the candidate's qualifications and experiences by serving up accurate and relevant responses for the resume content. This method not only streamlines the interview process, but also helps the interviewers in decision making by reducing human bias, thus significantly enhancing the quality of assessment.
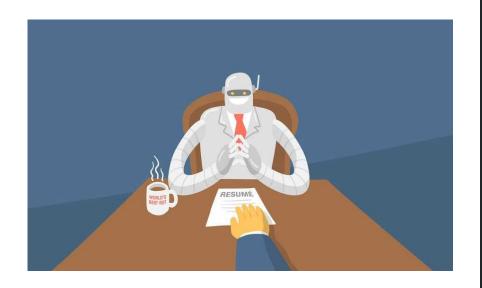
It also communicates with websites like fact-checking to check the response too keeping the track on user common question of can we rely on AI?

# Traditional Interview Process



A traditional interview is mostly a victim of irregularity and arbitrariness. The same resume may be interpreted inconsistently by different interviewers, causing the assessments to be biased and inconsistent. It affects hiring because of human errors, unconscious bias, resulting into qualified candidates being sidelined and unsuited candidates progressing in the interview stage.

# AI-Powered Interview



In contrast, the AI powered interview bot ensures consistency and objectivity in the hiring process, as it analyses resumes against predefined criteria and algorithms. By standardization of the test content, this will make sure all of the testers can be assessed based on the same measure, so bias and errors influenced by the human factor can be minimized.

Additionally, as mentioned above the bot can double-check facts based on facts from the fact-check websites - which makes the candidate evaluations even more trustworthy and accurate.

# Why the AI-Powered Process Excels?

Creating an AI bot that uses my resume and personal information to respond to questions provides significant advantages for both the general public and my job prospects.

**For the General Public:**
- Personalized, immediate interactions about my professional background, skills, and experiences.
- 24/7 availability for global networking and mentorship.
- Efficiently shares information, making it a valuable resource for advice and learning.

**For My Job Prospects:**
- Demonstrates technical skills in programming and AI development.
- Highlights communication skills by effectively conveying my qualifications.
- Differentiates me as tech-savvy, innovative, and proactive.
- Provides consistent, professional responses to potential employers, enhancing networking.

In summary, this AI bot enhances public engagement and strengthens my job application by showcasing my technical expertise, communication skills, and innovative mindset.

# Preparation of AI Powered Interview:

**1) Break It Down:** We start by taking the candidate's resume and breaking it up into bite-sized chunks using some Python wizardry.

**2) Embed the Knowledge:** Next, we feed each little chunk into a special AI model that converts the text into a numeric embedding - kind of like an ultra-compressed version that captures the essence.

**3) Store the Embeddings:** Those embeddings then get squirreled away in a fancy vector database designed for lightning-fast searches.

**4) Embed the Questions:** When an interviewer has a question, we run it through the same embedding model to get a numerical representation

**5) Search for Relevance:** Using the question embedding, we scan the vector database to find the stored resume chunks that are most relevant.

**6) Gather the Context:** We pull out those top-matching chunks to provide helpful context.

**7) Generate an Answer:** Finally, we send the question along with the relevant context over to a different AI model that can read through it all and formulate a response tailored to the specific interview question.

# My testing method and Tools



- **For embeddings**, we use powerful AI models like those from OpenAI or Hugging Face.

- **The question-answering** is handled by an advanced language model from OpenAI.

- 3) And **the vector database** is a slick system called Pinecone designed for searching through vast amounts of embeddings.

# References

**1) AI in Recruitment:**

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**2) Interview Automation:**

Zhang, L., Wang, K., & Xu, Z. (2017). "Automatic Generation of Personalized Interview Questions". In Proceedings of the 26th International Conference on World Wide Web Companion (pp. 287-293).

# What will I do next?

We'll build and test the AI interview bot prototype, then refine it based on feedback. Future work will improve accuracy, add more fact-checking, and study its impact on hiring.