HR-Tech Innovation Challenge: AI-Powered Resume Screening & Sentiment Analysis

By Aman Varma

Problem Statement

- **Resume Screening:**
  Manually reviewing resumes is time-consuming and error-prone.

- **Employee Feedback Analysis:**
  Organizations struggle to extract actionable insights and detect attrition risks from unstructured feedback.

- 🔍 **Goal:** Automate both tasks using AI + Prompt Engineering.

Technical Approach

- **Tool Used:** Google AI Studio
- 🧠 **LLM Prompts:** Carefully engineered for:
- Skill matching (resumes)
- Sentiment & attrition analysis (feedback)
- 🔄 **Pipeline Flow:**
Input Data → Prompt Engine → LLM Response → Parsed Output

Resume Screening Module

- **Input:** Candidate Resume (Text/PDF)

- 🎯 **Prompt Example:**
  "Evaluate this resume for the Software Engineer role..."

- 📊 **Output:** Matched skills, qualifications, experience, and job-fit score.

Sentiment Analysis Module

- **Input:** Employee feedback/survey

- 🧠 **Prompt Example:**
  "Analyze this feedback. Classify sentiment and suggest engagement strategies."

- 📈 **Output:**
  - Sentiment: Positive, Neutral, Negative
  - Attrition Risk: High/Low
  - Recommendations: Engagement tips

Challenges & Resolutions

Challenge	Resolution
Limited Data	Created mock datasets
Prompt Accuracy	Iterative tuning and testing
Model Deployment	Simulated LLM output locally

Impact & Conclusion

- ⏱️ **Time-Saving:** Speeds up resume filtering by 80%
- 🔍 **Insightful:** Provides actionable strategies to retain employees
- 🔄 **Scalable & Modular:** Easy to integrate into existing HR systems

Thank You! 🙏