



HR-TECH INNOVATION CHALLENGE

Submission By: R Sai Shivani

TASK 1

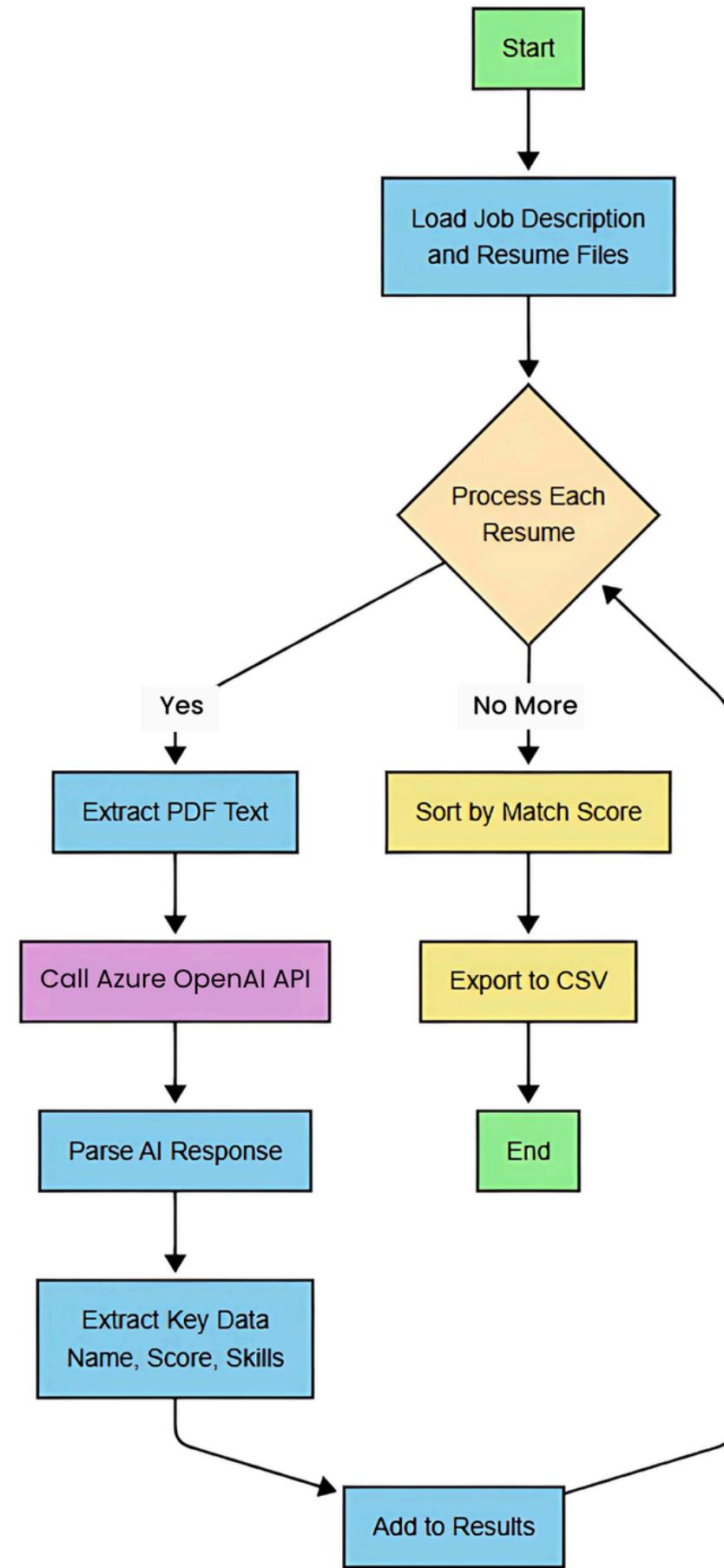
INTELLIGENT RESUME SCREENING

In present-day recruitment, comparing hundreds of applications to a job description is laborious and prone to human bias or oversight. An intelligent and effective solution is required to automatically scan resumes, compare them to a JD, and rank candidates based on their relevance and suitability for the role.



PROPOSED WORKFLOW

- **Automated Matching:** Built a pipeline that accepts a folder of PDF resumes and a .txt job description, automating skill and experience comparison.
- **LLM-Powered Analysis:** Utilized GPT-4.1 (via Azure OpenAI) to extract, evaluate, and match resume content against the job description.
- **Structured Output:** Generated a CSV with candidate name, match score, top 5 matched skills, 5-point summary, and final verdict.
- **Prompt Engineering:** Crafted a robust prompt instructing the LLM to extract, compare, summarize, and conclude with precision.
- **Candidate Ranking:** Sorted candidates by match score to streamline the shortlisting process.



The screenshot shows the Azure AI Foundry interface. In the top left, there's a navigation bar with 'Microsoft Azure' and a search bar. Below it, the resource name 'hrtechchallenge-openai' is displayed along with its status 'Keys and Endpoint'. A sidebar on the left lists various management options like Overview, Activity log, Access control (IAM), Tags, Diagnose and solve problems, Resource visualizer, and Resource Management (expanded). Under Resource Management, 'Keys and Endpoint' is selected. The main content area shows two sets of keys (KEY 1 and KEY 2) with placeholder text '.....', a location set to 'eastus', and an endpoint URL 'https://hrtechchallenge-ope...'. There are also 'Regenerate Key1' and 'Regenerate Key2' buttons.

This screenshot shows the 'resume_parser' endpoint configuration in the Azure Model Catalog. The left sidebar includes links for Home, Model catalog, Playgrounds, Build and customize, Agents, Templates, Fine-tuning, Observe and optimize, and Monitoring. The main panel displays the endpoint details: Target URI is 'https://saish-mbfeajdu-eastus2.cognit...'; Language is set to Pyt...; and SDK is set to Az... . A 'Get Started' section contains example code snippets for Python and C#.

BUSINESS IMPACT

Improved Hiring Accuracy:
Ensures consistent evaluation by objectively matching skills and experience to job requirements.

Time Savings:
Automates resume screening, reducing manual review time by over 80%.

Enhanced Decision-Making:
Delivers actionable insights like match scores, skill gaps, and qualification verdicts to aid faster shortlisting.

TASK 2

ATTRITION RISK DETECTION + SUGGESTION GENERATOR

Traditional HR techniques can be useful in tracking attrition patterns, but they frequently miss early warning indicators concealed in employee attitude or qualitative feedback.

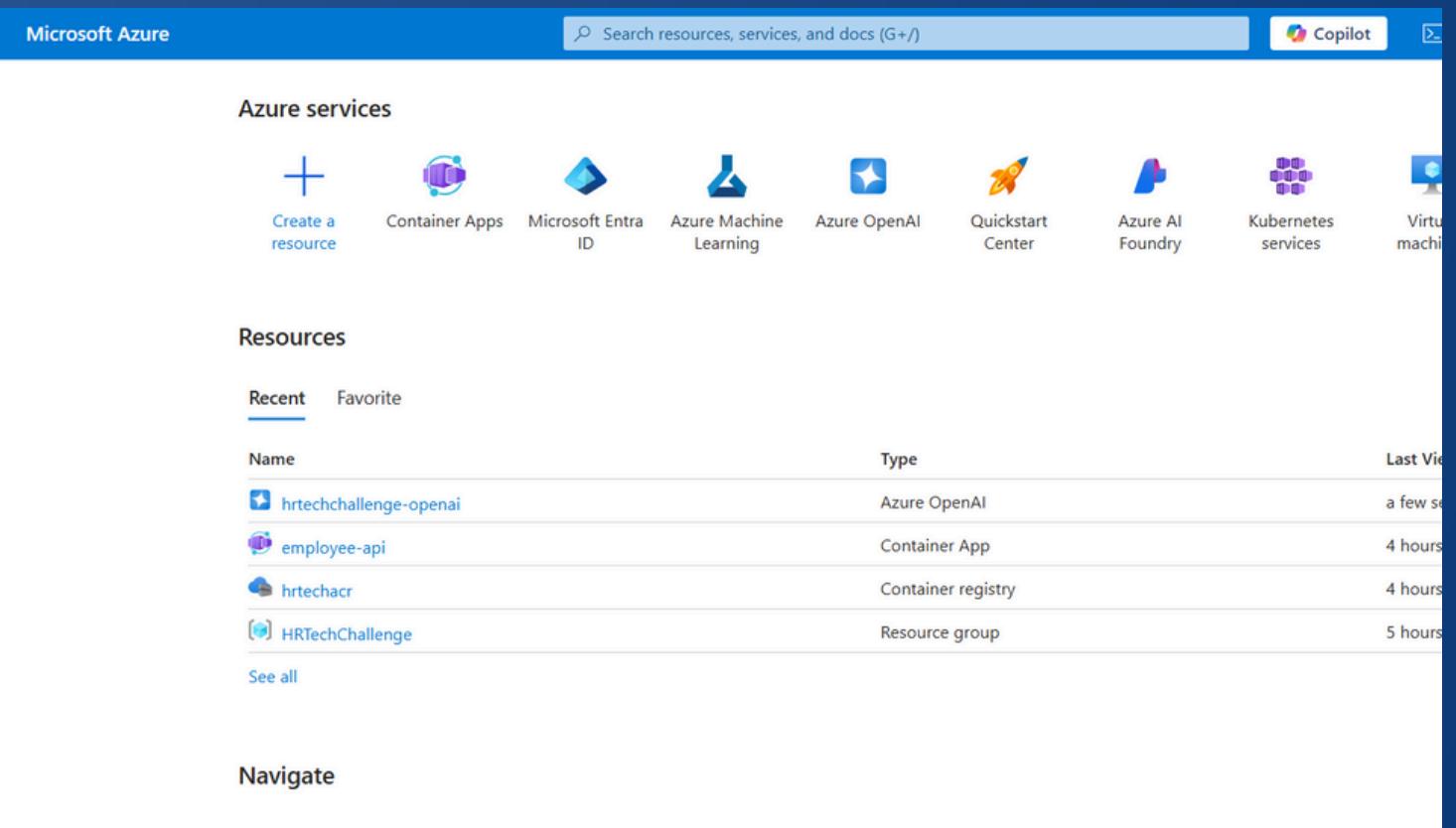
There is a clear need for a robust system that can:

- Automatically interpret employee feedback,
- Quantify both emotional sentiment and attrition probability,
- And provide tailored, actionable recommendations to improve retention.

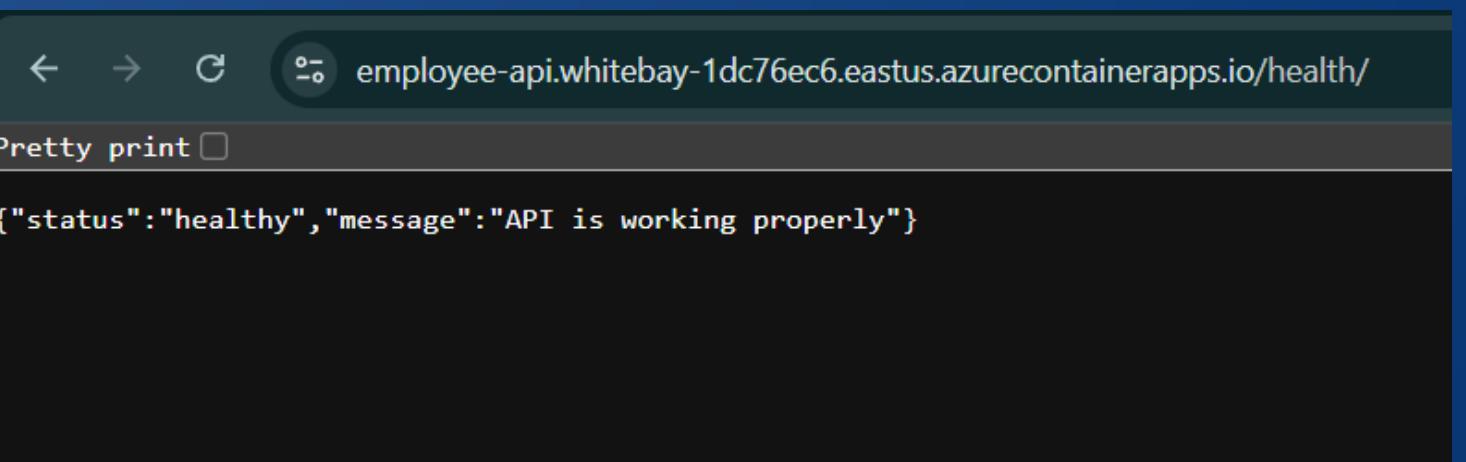


PROPOSED WORKFLOW

- **Input:** The input is a structured CSV file containing employee details and feedback.
- **Sentiment Analysis with VADER:** Valence Aware Dictionary for Sentiment Reasoning is a lightweight NLP model, processes the employee feedback to assign:
 - A compound sentiment score between -1 (negative) and +1 (positive)
 - A sentiment label (e.g., Positive, Neutral, Negative) based on the score
- **Attrition Risk Prediction with XGBoost:** A trained XGBoost classifier uses employee features (excluding feedback) to calculate an attrition score on a 0–10 scale, reflecting the likelihood of the employee leaving.
- **LLM-Powered Analysis with GPT-4.1 (Azure OpenAI):** A custom-designed prompt sends the feedback, sentiment, and attrition score to GPT-4.1, which returns:
 - An Attrition Risk Level: High, Medium, or Low
 - A personalized retention suggestion to address employee concerns or risks
- **Output:** Enhanced CSV with Employee ID, Feedback, Sentiment, Attrition Risk, Suggestion

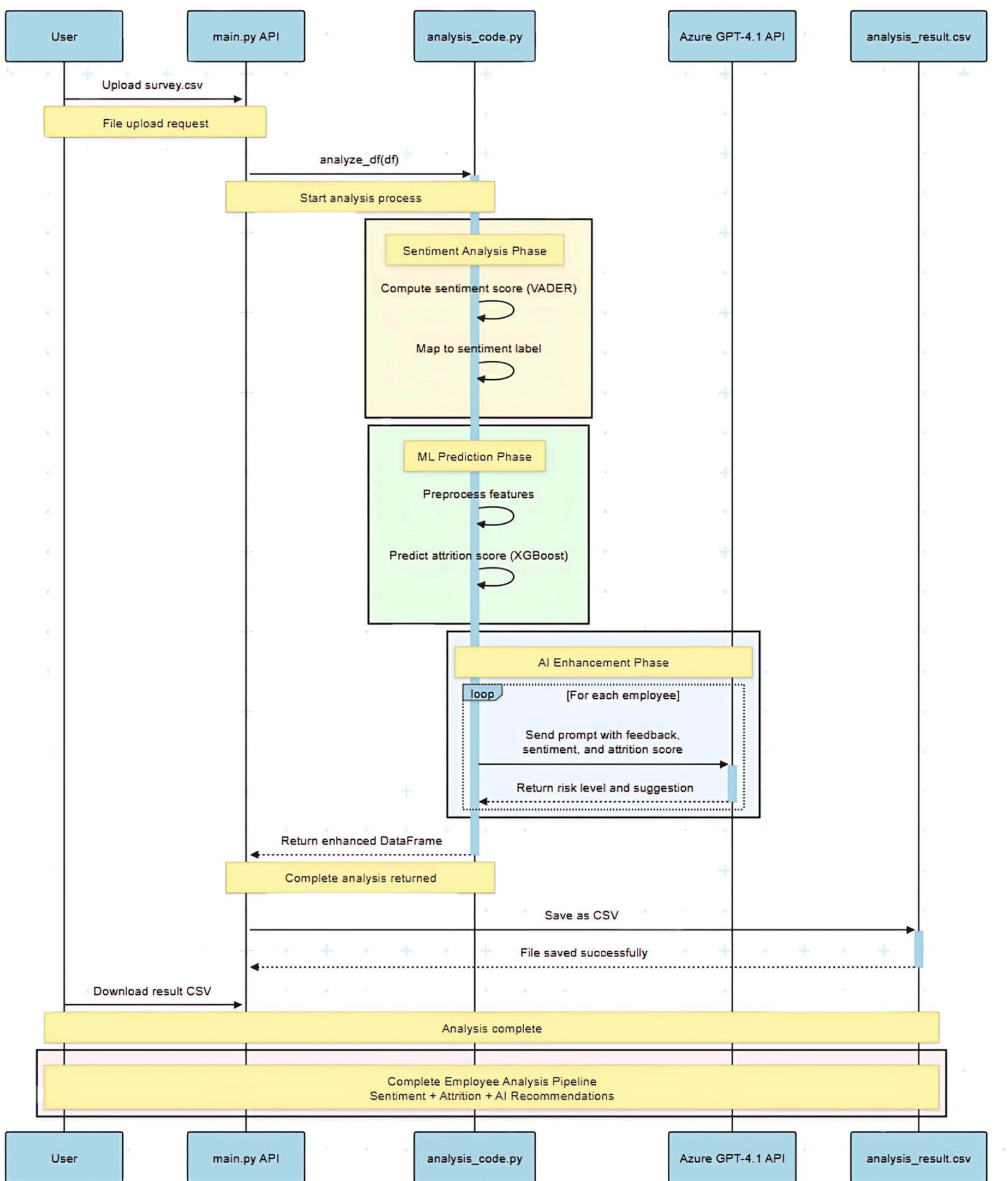


The screenshot shows the Microsoft Azure portal's main dashboard. At the top, there's a search bar labeled "Search resources, services, and docs (G+/" and a "Copilot" button. Below the search bar, there's a section titled "Azure services" with various service icons and links: "Create a resource", "Container Apps", "Microsoft Entra ID", "Azure Machine Learning", "Azure OpenAI", "Quickstart Center", "Azure AI Foundry", "Kubernetes services", and "Virtual machines". The main area is titled "Resources" and has tabs for "Recent" and "Favorite". Under "Recent", there are four items listed: "hrtechchallenge-openai" (Azure OpenAI), "employee-api" (Container App), "hrtechacr" (Container registry), and "HRTechChallenge" (Resource group). Each item has a "Name", "Type", and "Last Viewed" column. At the bottom, there's a "See all" link and a "Navigate" section with a "Cloud Shell" button.



The screenshot shows a browser window displaying the health check response of an Azure Container App. The URL is "employee-api.whitebay-1dc76ec6.eastus.azurecontainerapps.io/health/". The page content is a JSON object: {"status": "healthy", "message": "API is working properly"}. There are "Pretty print" and "Copy" buttons above the JSON output.

BUSINESS IMPACT



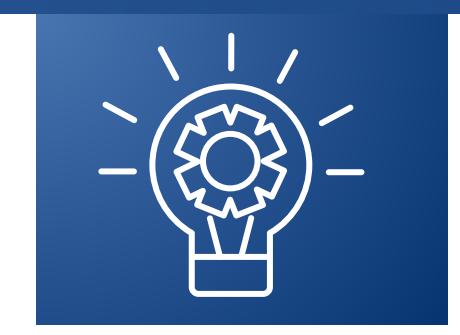
Proactive Attrition Management

HR teams can identify high-risk employees before they decide to leave, allowing timely interventions and retention strategies.



Scalable HR Decision Support

The automated pipeline analyzes hundreds of feedback entries in minutes, enabling large-scale analysis without manual effort.



Improved Workplace Satisfaction

With actionable insights per employee, companies can foster a more supportive, responsive, and engaging work environment.

