Project Portfolio – Yash

# Project 1: Text-to-Audio Bot

A Python-based tool that converts the content of a PDF into spoken audio using ElevenLabs voice synthesis.

## Overview

Project Name: Text-to-Audio Bot

Role: Full Stack Developer

Tech Stack: Python, PyPDF2, ElevenLabs API, dotenv, MoviePy

Problem Solved: Manually reading long PDF documents can be time-consuming. This bot automates PDF reading by converting it into audio.

Outcome / Impact: Successfully generates human-like voiceovers from PDFs. Can be used for news, articles, or accessibility tools for the visually impaired.

## GitHub Repository

👉 [GitHub Repo Link Here]

## Resume-Ready Entry

Text-to-Audio Bot – PDF to Voice Automation

📍 Built a PDF-to-Audio pipeline using Python and ElevenLabs API.

- Engineered automated processing of news/article PDFs into high-quality `.mp3` audio files.

- Implemented OCR cleanup, API-based voice synthesis, and audio file management.

- Useful for accessibility, content listening on-the-go, or content repurposing.

# Project 2: Audio-to-Video Generator

This project converts an audio narration and PDF script into a synchronized, high-quality Instagram Reel-style video with captions and background music, fetched live from APIs.

## Overview

Project Name: Audio-to-Video Generator

Role: AI Workflow Engineer & Video Automation Developer

Tech Stack: Python, MoviePy, FFmpeg, Pixabay API, Freesound API, Pillow, PyPDF2

Problem Solved: Manual creation of video content from scripts is time-consuming. This bot automates the full process from narration to final Instagram Reel.

Outcome / Impact: Creates highly engaging, captioned video content dynamically using only a PDF script and generated narration, ideal for Shorts/Reels content creators.

## GitHub Repository

👉 [GitHub Repo Link Here]

## Resume-Ready Entry

Audio-to-Video Generator – Automated Video Creation for Reels

📍 Developed a video generator that transforms a narrated script into Instagram-style videos.

- Automatically fetches stock footage and background music via APIs (Pixabay, Freesound).

- Syncs subtitles line-by-line with narration using PDF script parsing and MoviePy.

- Formats vertical videos (9:16), adds animated captions, mixes narration and BGM, and renders final `.mp4` output.

# Project 3: Z-Score Arbitrage Monitor

A lightweight statistical monitoring system that tracks price differences in real-time across selected cryptocurrency exchanges using a custom spread and Z-score model.

## Overview

Project Name: Z-Score Arbitrage Monitor

Role: Backend Engineer & Quantitative Signal Developer

Tech Stack: Python, Pandas, NumPy, ccxt, PostgreSQL (optional), Telegram/Discord API

Problem Solved: Built a real-time analytics tool to identify rare pricing anomalies in crypto pairs across multiple exchanges.

Outcome / Impact: Generates concise signals based on statistical deviation, useful for manual or algorithmic monitoring of inefficiencies across markets.

## GitHub Repository

👉 [GitHub Repo Link Here]

## Resume-Ready Entry

Z-Score Arbitrage Monitor – Crypto Price Anomaly Detection Bot

📍 Developed a real-time signal engine that tracks pricing deviations of crypto pairs across multiple exchanges.

- Used Z-score and spread reversion logic to filter high-confidence signals in fast-moving markets.

- Integrated multiple data sources (Binance, Kraken, etc.) via REST APIs with cooldown and alert control.

- Alerts published via Telegram/Discord for real-time monitoring of observed statistical outliers.

- Architected with a modular, event-driven design and scalable components (stats engine, data feed, storage).

# Project 4: Health Risk Prediction Bot

A smart diagnostic assistant that combines daily nutrition logs and blood test reports to assess potential lifestyle diseases using a trained AI model.

## Overview

Project Name: Health Risk Prediction Bot

Role: AI Developer & Health Analytics Engineer

Tech Stack: Python, TensorFlow, Pandas, PyPDF2, Scikit-learn, Excel I/O

Problem Solved: Manual analysis of nutrition and pathology reports lacks preventive insight. This tool proactively calculates disease risks based on real-world food intake and medical reports.

Outcome / Impact: Provides users with an early warning system for lifestyle disorders like diabetes, NAFLD, CKD, and more — combining daily calories and lab values into meaningful, actionable health insights.

## GitHub Repository

👉 [GitHub Repo Link Here]

## Resume-Ready Entry

Health Risk Prediction Bot – Preventive AI System for Early Disease Detection

📍 Designed and deployed an AI-powered health monitoring system that predicts the risk of chronic diseases based on an individual's nutritional intake and diagnostic blood reports.

- 🧠 Developed a custom multi-input pipeline combining user-reported dietary logs and auto-extracted pathology metrics from Dr. Lal PathLabs reports (via PDF parsing using PyPDF2).

- 📊 Engineered a synthetic clinical dataset (15,000+ records) simulating real-world nutrient and biomarker variability across 10 lifestyle diseases (Diabetes, CKD, NAFLD, etc.).

- 🧬 Trained a multi-label TensorFlow neural network to forecast disease probabilities using 37 key features (macronutrients, cholesterol, uric acid, GFR, ALT, etc.).

- ⚕️ Implemented interpretability by attaching personalized dietary recommendations based on model outputs — e.g., reduce sodium, increase calcium, adjust protein based on predicted risks.

- 🗂️ Modularized user flow: login, daily food logging, blood report parsing, weekly nutrition summaries, model inference, and tailored health advice — all linked to persistent Excel logs.

- 💡 Built for preventive care: enables general users to gain clinical-grade insight without visiting a doctor — makes early detection approachable, especially in data-poor or underserved regions.