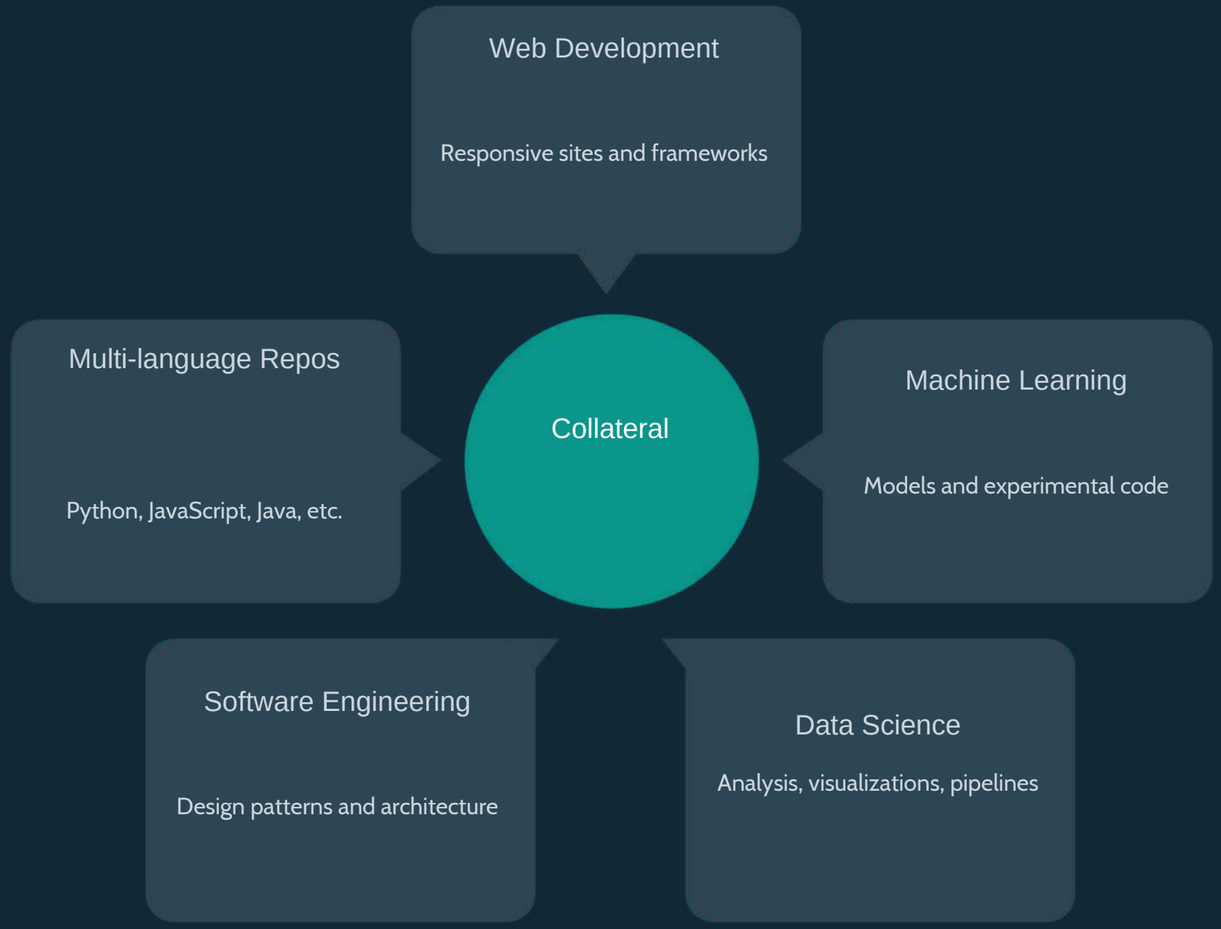
Meeqat Suharwardy Collateral

Welcome to collateral showcasing a diverse range of projects spanning web development, machine learning, data science, and software engineering. This highlights key repositories demonstrating my technical expertise across various programming languages and frameworks.



Air Quality Monitoring & Forecasting System for Govt. Of Punjab

Environment Protection and Climate Change Department
Government of The Punjab

Data Integration & AI Modeling

- Combined historical and real-time AQI data from ground-based analysers with remote sensing satellite data (Sentinel-5P).
- Trained an AI model (e.g., LSTM, Random Forest Regression) to predict AQI up to 7 days in advance.

GIS Visualization & Alerts

- Visualized AQI forecasts on an interactive Punjab map with drill-down capabilities to city and district levels.
- Implemented an alert system to notify relevant departments and citizens when air quality is predicted to reach unhealthy levels.

Tourism Department Govt. of Punjab

An AI-driven platform to collect, analyze, and manage feedback about Punjab's tourism facilities.

1

Capture Feedback

Tourists can submit reviews and complaints through a multi-channel web app.

2

Analyze Sentiment

AI-powered NLP classifies issues, extracts emotions, and prioritizes urgency.

3

Generate Insights

Correlate complaints with external data to auto-generate hotel performance profiles.

Smart Dashboard

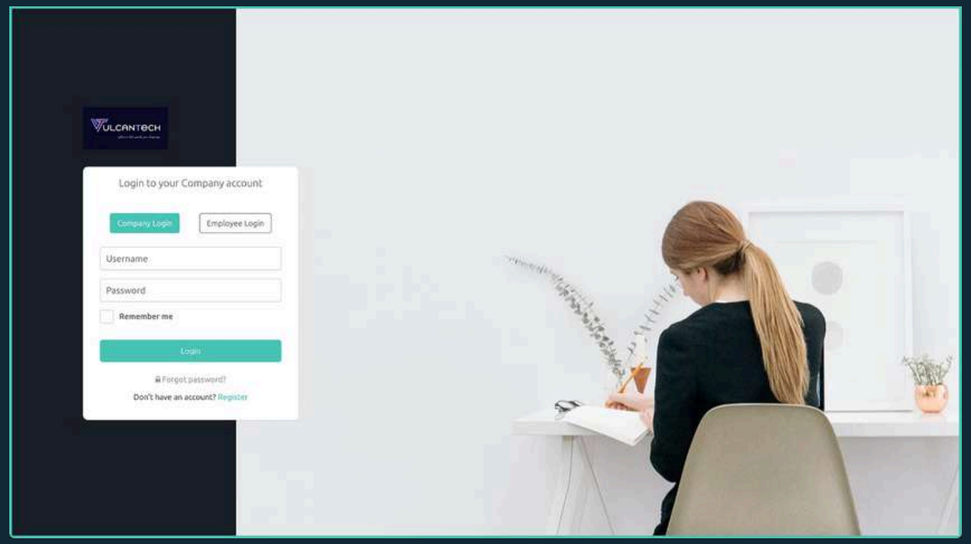
Real-time overview of complaint trends, AI-generated alerts, and regional satisfaction indexes.

Chatbot Assistant

Conversational AI to respond to queries about complaints, facility ratings, and public sentiment.

HR Management System (HRMS)

A comprehensive, full-stack solution designed to streamline HR processes, handling complex employee data, payroll, attendance, and report generation. Built for scalability, it supports small to large-scale businesses.



Secure Access

Empower your team with secure employee and admin portals.

Streamlined Payroll

Integrate payroll for a seamless financial experience.

Attendance Tracking

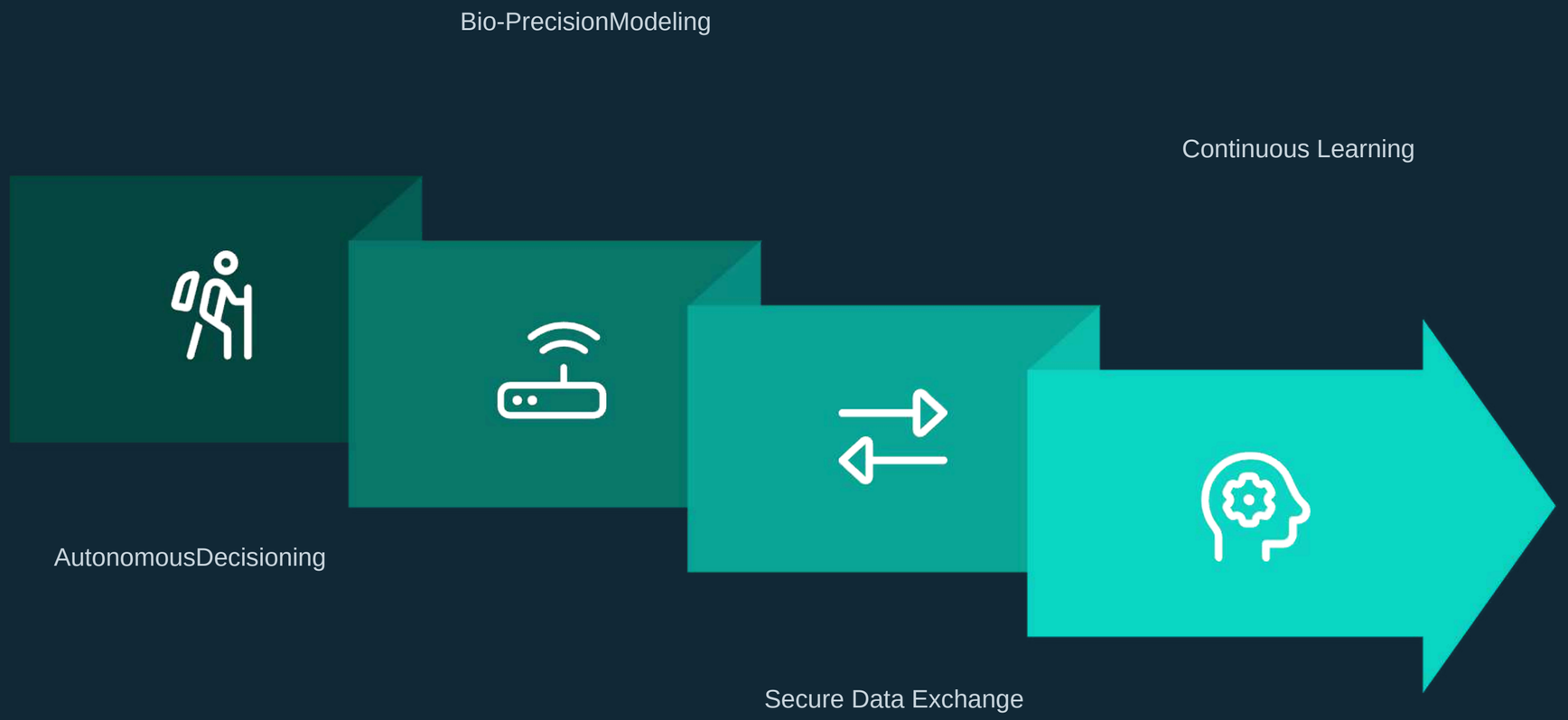
Leverage biometric technology to effortlessly track attendance.

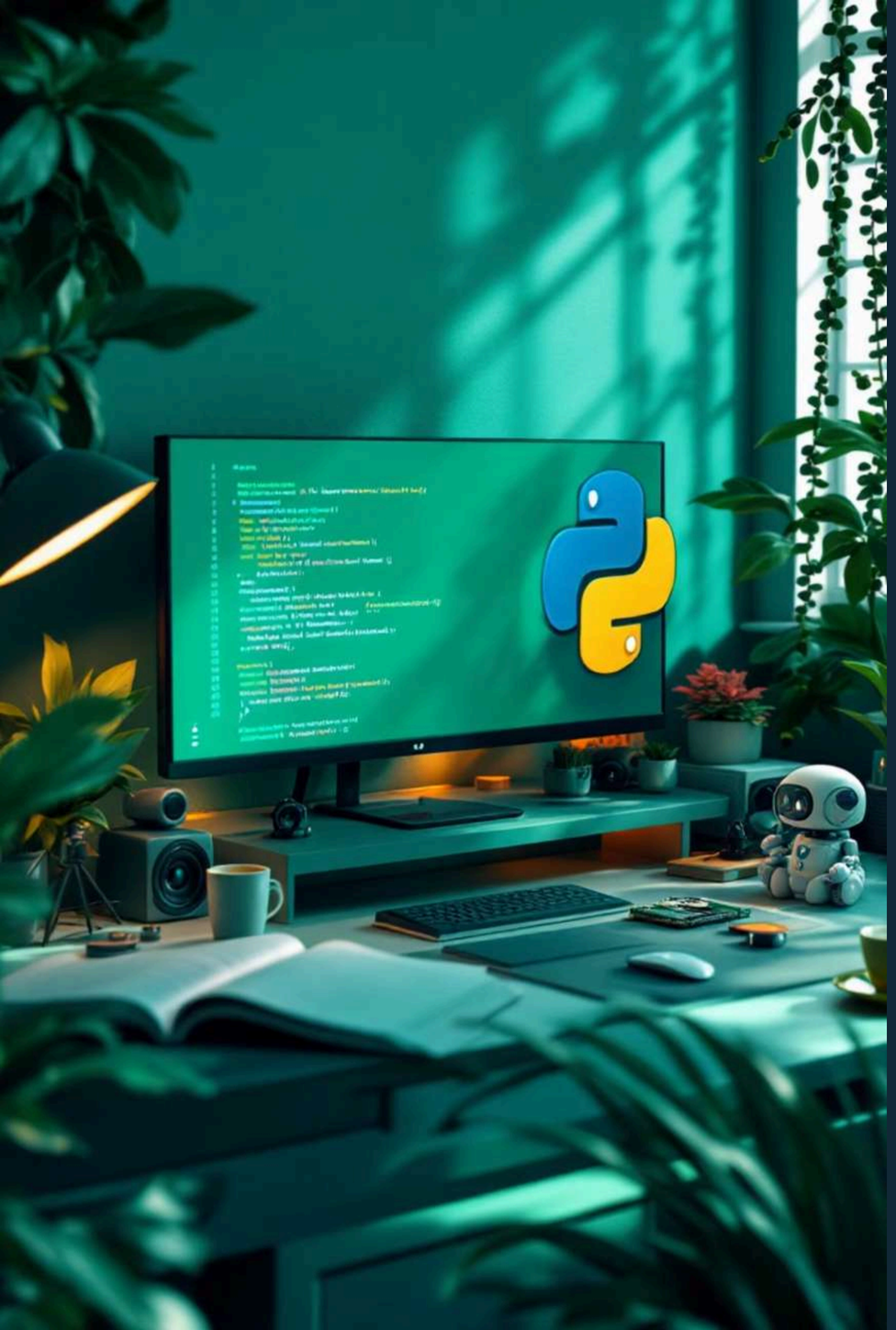
Flexible Payments

Offer Stripe-powered subscription plans for your customers.

Agentic AI Systems: Decentralized Finance & Precision Biology

Developed advanced agentic AI systems, empowering autonomous intelligence across the cutting edge domains of crypto and generative genetic AI.





Computer Vision & Image Processing

Stereo Calibration & 3D Reconstruction

1. Print chessboard pattern, mount on board
1. Set up stereo camera pair, fix in place
1. Capture calibration images using CaptureCalibrationImages.py

1. Calibrate stereo camera with CalibrateStereocamera.py
1. Test calibration with CaptureTestImages.py and Rectification.py
1. Use displayDepth_image.py or displayDepth_video.py to compute disparity and depth maps

OpenCV Projects

A collection of computer vision applications.

Deep Learning Techniques

Applying deep learning techniques to blend content and style images.

Python Implementation

Implemented in Python with OpenCV in Jupyter Notebooks.

Advanced Image Manipulation

Demonstrates advanced image manipulation capabilities.

Speech Synthesis & Big Data

WaveRNN : Turn Text Into Lifelike Speech

High-Quality Voice

WaveRNN converts text into natural-sounding speech with impressive fidelity.

Spark2

A starting point for building big data applications using Scala and Apache Spark 2.4, intended for teaching purposes.

Docker Spark Yarn Cluster

Provides scripts and configuration for building a Spark-on-YARN setup via Docker containers using Apache Spark 3 and Hadoop YARN.

Large Language Models & Analytics

LLAMA.cpp

C/C++ implementation of LLaMA-based LLM inference using ggml, supporting CPU, GPU (CUDA, Metal, Vulkan, SYCL) with Python, Rust, and JavaScript bindings.

Zeppelin

A web-based notebook for interactive data analytics, visualization, and collaboration with multi-language support including Java, Scala, Python, SQL, and Apache Spark.

Chat UI

An interactive, web-based notebook for data analytics, visualization, and collaboration using Java, Scala, Python, SQL, Spark, and modern web technologies.

Web Development & Frontend Projects

1

GameSvelteKit

A SvelteKit project scaffolded using create-svelte, designed for building interactive web applications with JavaScript, Vite, and CSS.

2

Food-Restaurant-App

A mobile application built using Dart and Flutter for restaurant ordering and food management systems.

Data Visualization & Analysis

PubMed Landscape

A forked project visualizing the landscape of biomedical research using Python, Jupyter Notebook, and advanced data visualization techniques.

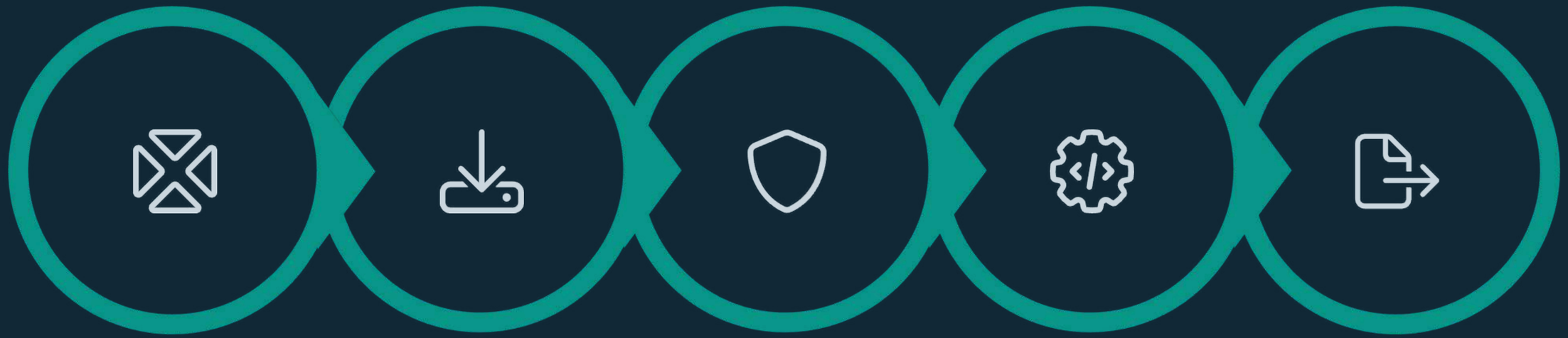
Streamlit Buffett

An LLM-based application for SQL generation and document retrieval using Streamlit, Python, and Snowflake integration.

Predictive Data Analysis

A comprehensive project focused on predictive analytics and modeling using Python, Pandas, and Scikit-learn.

Specialized Projects & Skills



Scraper David: Advanced Web Scraping

Recently developed Python-based Jupyter notebooks to automate the extraction of property and contact data. The project involved bypassing anti-bot protections (Cloudflare), handling cookies/sessions, and performing skip tracing to enrich datasets. Data exports were managed in Excel and PDF formats.

This hands-on experience has made me proficient with tools like Selenium, BeautifulSoup, requests, and proxy rotation—all critical for large-scale web scraping.