2024-08-19-MOC-Pipeline-Threat-Detection-Project

MOC: Pipeline Threat Detection Project

Summary: This note serves as a Map of Content (MOC) for the project to develop and deploy a computer vision (CV) system for VanGuard Pipeline to detect threats along pipeline corridors from their aircraft.

Body:
Consulting project initiated by Austin to assist VanGuard Pipeline in integrating computer vision capabilities onto their existing gas detection aircraft. The goal is to create an MVP system that can identify, flag, and report potential threats (e.g., heavy equipment, vehicles, people) near pipeline rights-of-way in real-time.

Project Start Date: 2024-08-14 (First Meeting)

Key Areas & Notes

- **Project Framework:** 01_Planning_and_Strategy/2024-08-19-Project-Framework-Double-Diamond
- **Company Profile:** 02_Reference_and_Concepts/2024--19-Company-Profile-VanGuard-Pipeline
- **Project Plan:**
  - 01_Planning_and_Strategy/2024-08-19-MVP-Project-Cadence
  - 01_Planning_and_Strategy/2024-08-19-MVP-Scope-Sign-of-Life
- **Strategy & Analysis:**
  - 01_Planning_and_Strategy/2024-08-19-Threat-Prioritization-Analysis
  - 01_Planning_and_Strategy/2024-08-19-Success-Criteria-MVP
- **Concepts & Definitions:** 02_Reference_and_Concepts/2024-08-19-Concept-CV-Class-List
- **Technical Deep Dive:** 03_Technical_Deep_Dive/2024-08-19-MOC-Current-State-Analysis
- **Immediate Next Steps:** 01_Planning_and_Strategy/2024-08-19-Initial-Research-Tasks
- **Project Meta:** 99_Meta/2024-08-19-Knowledge-Base-Architecture

Open Questions

- What are the early warning indicators for dataset acquisition failure?
- What is the ideal operator UI/UX at the moment of detection?

01_Planning_and_Strategy

This section contains the project's planning and strategy documents.

Define Phase Artifacts (Current)

- Pipeline Threat Detection/01_Planning_and_Strategy/2_Define/2024-08-19-Define-Phase-Synthesis-Matrix.md
- Pipeline Threat Detection/01_Planning_and_Strategy/2_Define/2024-08-19-MVP-Decision-Log-and-Strategy.md

Develop Phase Artifacts (Current)

- Pipeline Threat Detection/01_Planning_and_Strategy/3_Develop/2024-08-19-PRD-Sign-of-Life-MVP.md
- Pipeline Threat Detection/01_Planning_and_Strategy/3_Develop/2024-08-19-User-Personas-and-Stories.md

Discover Phase Artifacts

- 01_Planning_and_Strategy/1_Discover/2024-08-19-Core-Hypotheses-Decomposition.md
- 01_Planning_and_Strategy/1_Discover/2024-08-19-Knowns-Needs-Constraints.md
- **Market Research:**
  - 01_Planning_and_Strategy/1_Discover/Market_Research/2024-08-19-Academic-Research-Review.md
  - 01_Planning_and_Strategy/1_Discover/Market_Research/2024-08-19-Competitive-Landscape.md
  - 01_Planning_and_Strategy/1_Discover/Market_Research/2024-08-19-Research-References.md
  - 01_Planning_and_Strategy/1_Discover/Market_Research/2024-08-19-SOTA-CV-Models.md

02_Reference_and_Concepts

This section contains evergreen documents that provide foundational context for the project.

- 02_Reference_and_Concepts/2024-08-19-Company-Profile-VanGuard-Pipeline.md
- 02_Reference_and_Concepts/2024-08-19-Concept-CV-Class-List.md
- 02_Reference_and_Concepts/2024-08-19-Concept-Geospatial-Integration-Strategy.md

Technical Deep Dive

- 03_Technical_Deep_Dive/2024-08-19-MOC-Current-State-Analysis.md
- 03_Technical_Deep_Dive/2024-08-19-Current-State-Hardware.md

Welcome

This is your new *vault*.

Make a note of something, create a link, or try the Importer!

When you're ready, delete this note and make the vault your own.

2024-08-19-Knowledge-Base-Architecture

Knowledge Base Architecture

Summary: This document outlines the purpose and philosophy behind the folder structure of this project's knowledge base.

Body:

A well-defined structure is essential for maintaining clarity and accessibility of information as the project grows. The folder system is organized by the function and permanence of the information contained within. The numerical prefixes ensure a consistent and logical sort order.

Folder Breakdown

- `00_Project_Hub/`

  - **Purpose:** The central entry point for the project. Contains the main Map of Content (MOC), project charters, and the most critical top-level documents. Anyone joining the project should start here.

- `01_Planning_and_Strategy/`

  - **Purpose:** To house documents related to the project's direction and execution. This includes project plans, strategic analyses (like our [2024-08-19-Threat-Prioritization-Analysis](#)), and roadmaps.

- `02_Reference_and_Concepts/`

  - **Purpose:** A library for "evergreen" or foundational knowledge that provides context but does not change frequently. This is for company profiles, definitions of key terms (like our [2024-08-19-Concept-CV-Class-List](#)), and background information.

- `03_Technical_Deep_Dive/`

  - **Purpose:** For the core technical substance of the project. It holds the "As-Is" analysis of the current state and will contain all future "To-Be" architectural designs, hardware specifications, software choices, and model details.

- `04_Meetings_and_Discussions/`

  - **Purpose:** An archive for notes and summaries from specific points in time, such as stakeholder meetings, syncs, and important email communications.

- `99_Meta/`

  - **Purpose:** For documents *about* the project, rather than *of* the project. This includes this architecture document, agent prompts, and other meta-level configurations.