CELEBAL TECHNOLOGIES

Line of Fire Detection

Microsoft Solutions Partner

Infrastructure (Azure)
Data & AI (Azure)
Digital & App Innovation (Azure)
Security
Biz Applications

Celebal Specialization and Strength

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Microsoft
AI Partner Of The Year 2023
Global

databricks
Partner Of The Year 2022 & 2023
Asia Pacific and Japan
2 YEARS IN A ROW

databricks
Migrations Partner Of The Year 2023
Asia Pacific and Japan

Partnerships

Microsoft Solutions Partner

databricks Elite Partner

SAP Silver Partner

Red Hat Ready Business Partner

Advanced Specialization

- AI & Machine Learning
- Analytics
- Infra and Database Migration
- Kubernetes
- Cloud Security
- Low Code No Code
- Intelligent Automation

INDIA | USA | CANADA | APJ | MIDDLE EAST | AUS

2800+ Employees

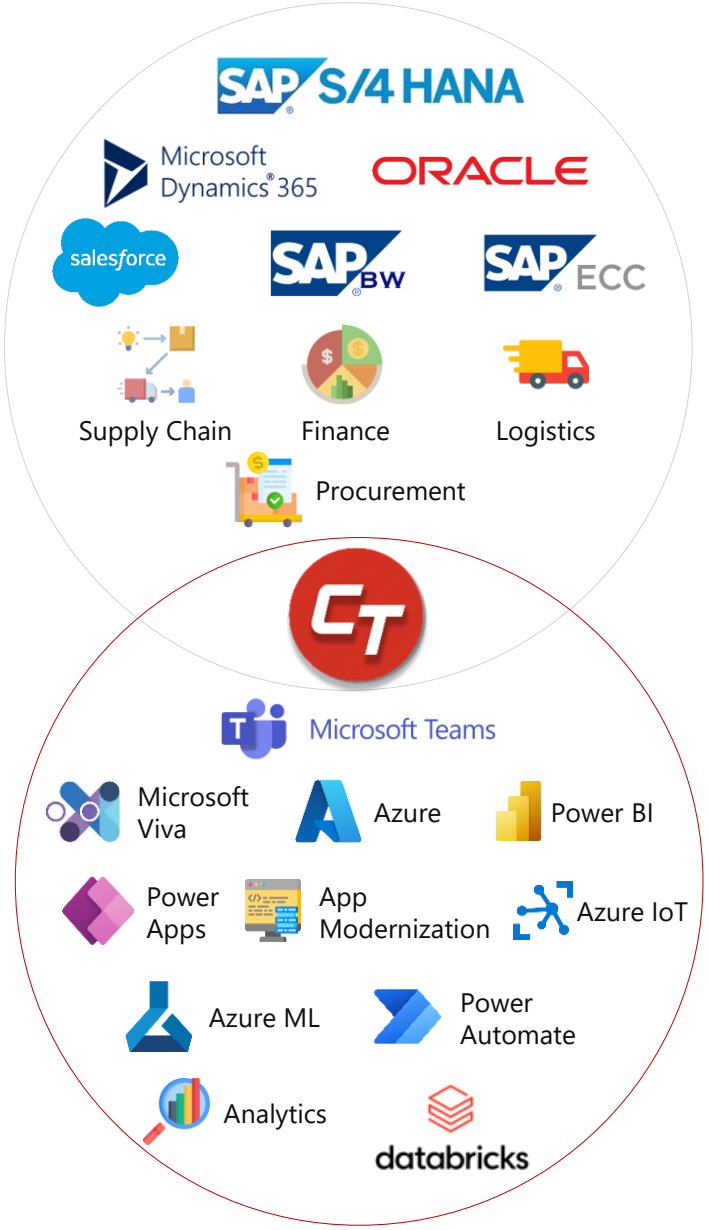
800+ AI experienced professionals

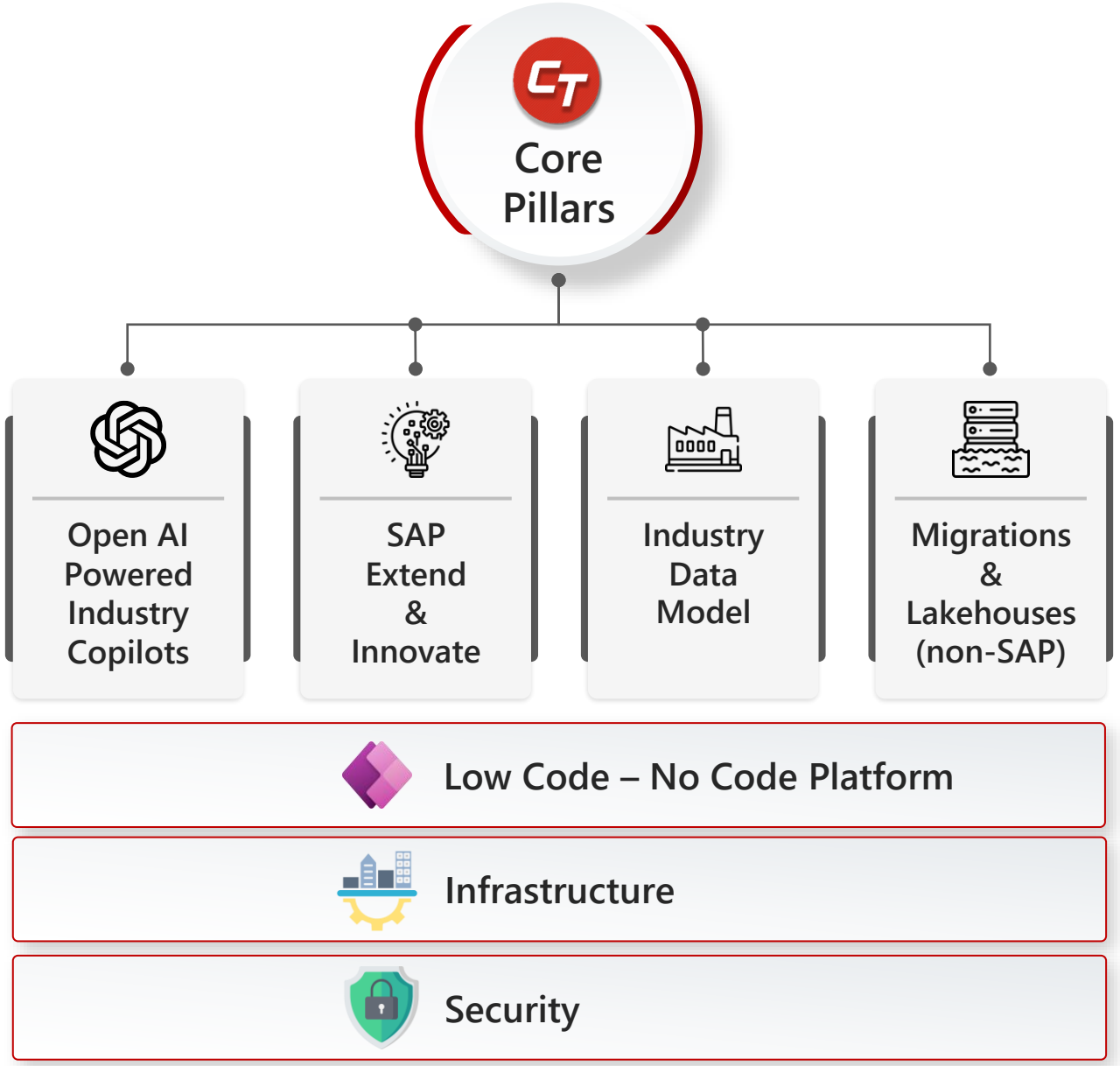
500+ AI Certifications

Industries We Serve

- Manufacturing
- Retail & CPG
- Financial Services
- Energy & Sustainability
- Healthcare & Life Sciences
- Media & Entertainment

Celebal Core Pillars





Line of Fire Detection

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1. Brief Description of the Solution:

Our Line of Fire Detection Solution proactively identifies and assesses workplace hazards, ensuring unparalleled safety protocols. Powered by advanced technologies like Azure Machine Learning, Azure Container Registry, Kubernetes Services, Azure Cosmos DB, and Azure Blob Storage, our solution offers real-time detection and alerts, enabling proactive risk mitigation. Its intuitive interface provides detailed insights, empowering safety managers to make informed decisions. It leverages Azure Custom Vision, Segment Anything Model (SAM), OpenAI CLIP, and few-shot learning for pixel-level accuracy, contextual analysis, and fast adaptation to emerging threats. Prioritize your workforce's well-being with our innovative solution, setting a new standard in industrial safety and risk management.

2. Business Problem It Solves:

Energy infrastructure operators face significant challenges in maintaining the integrity, safety, and operational efficiency of their assets. Traditional methods of inspection and monitoring are often labor-intensive, reactive, and prone to human error. These limitations can lead to safety incidents, service disruptions, regulatory non-compliance, and increased maintenance costs. The solution addresses these challenges by automating detection processes, providing continuous monitoring, and delivering timely alerts and insights for proactive maintenance and risk mitigation.

3. Value Add for Customer:

- Real-Time Hazard Detection: Actively monitors for potential hazards to ensure immediate identification of risks, enhancing on-site worker safety.
- Instant Alert System: Equipped with a rapid-response mechanism that sends instant alerts, enabling swift, preventive action to protect personnel.
- Data-Driven Safety Enhancements: Continuously analyzes hazard detection metrics, protocol adherence, and incident trends to drive ongoing improvements in safety practices.
- Scalable, Seamless Integration: Built on Azure for effortless scalability and smooth integration with existing enterprise systems, enabling fast deployment with minimal operational disruption.
- Proactive Compliance Assurance: Enables continuous monitoring to promptly identify risks and ensure ongoing compliance with safety and regulatory standards.

Few shot Image Segmentation (SAM + CLIP)

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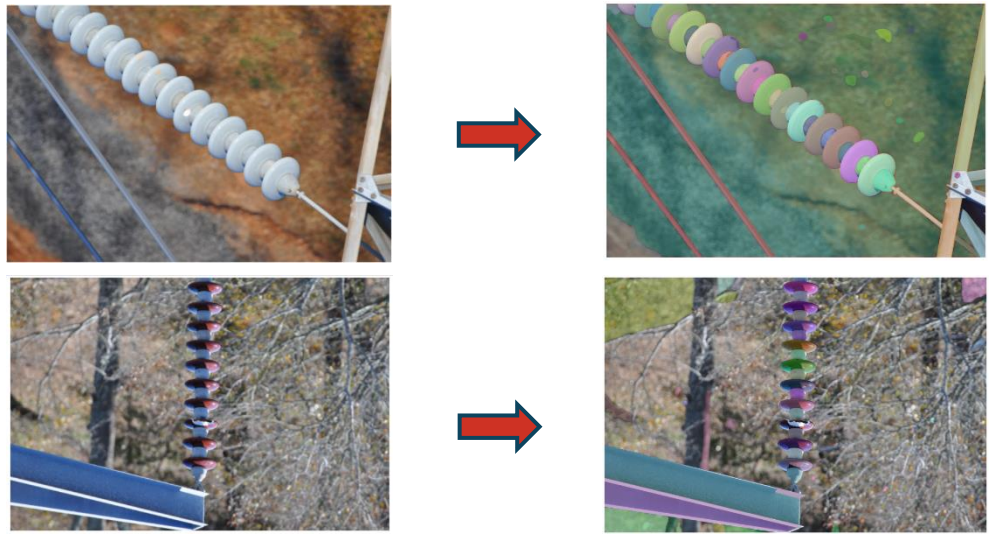
Overview

This approach uses zero-shot learning with FAIR's SAM model for image segmentation with minimal labeled data. CLIP model is used to filter segmented regions based on natural language prompts, enabling rapid development of image segmentation applications with little to no training data.

Object proposals generated by SAM (Zero Shot)



Approach

Get all object proposals generated by SAM

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Crop the object regions by bounding boxes

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Get cropped images' features and a query feature from CLIP

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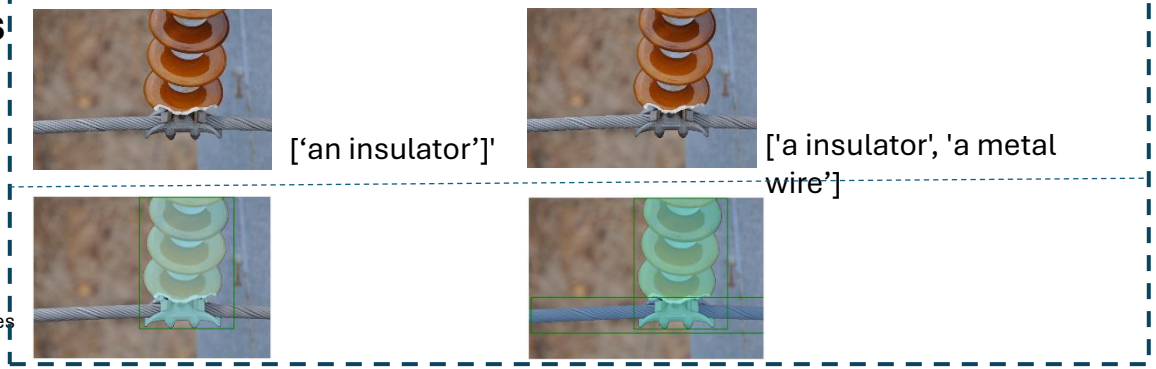
Infer mask regions based on similarity between image features and the query feature

Results



Conclusion

Hence by cropping object regions and extracting visual features with CLIP, we can efficiently perform instance segmentation selectively using natural language prompts by matching images and textual contexts. This approach has a significant impact on applications such as image retrieval and segmentation of various region of interests, where accurate and efficient collection of data is critical for user experience and productivity.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Thank You