

Tiger Analytics helped a **US-based railroad company** achieve **90%+ accuracy** with **DL-based automated asset maintenance**



Tiger Analytics brought a legacy of expertise to develop advanced Deep Learning models using Computer vision techniques. It ensured the seamless automation of asset maintenance and fault detection. The solution identified defects like track repair, missing bolts, wheel defects and more with tremendous accuracy.



The Background

Our client is one of six North American Class I Railroads with nearly 8,000 locomotives. Their three transcontinental routes provided rail connections between the western and eastern United States. Hence, fault detection played a crucial role in their day-to-day operations, especially asset management. So, the client was looking for an automated Advanced Analytics solution to transform this manual-intensive process.

Key Challenges

- ▮ **Reliance on manual fault inspection:** Fault detection relied heavily on manual inspections, which were time-consuming and prone to human errors.
- ▮ **Undetected fault risks:** There was a high likelihood of faults that went undetected, leading to increased safety risks and financial burdens for the company.
- ▮ **Severe consequence frequency:** There was a high occurrence of potentially fatal and expensive-to-repair consequences.



Our Solution

Tiger Analytics developed a Computer-Vision-based Analytics solution to equip the client with automated asset management and maintenance capabilities.

At an initial stage, the team used image analytics to identify and track repair needs such as missing bolts, fractured sleepers, etc. Image Analytics were leveraged to create models for detecting defects and faults in the wheel and Coupler Carrier Plates (CCP).

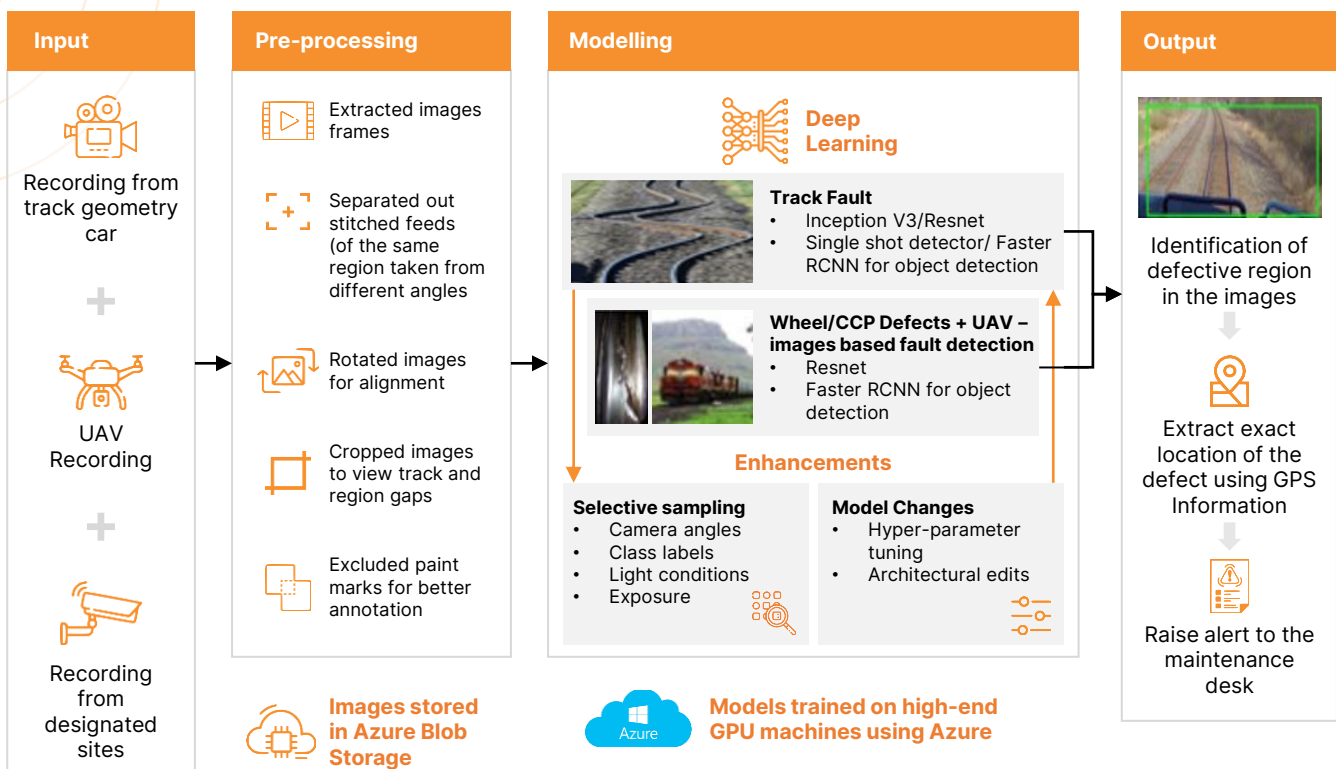
The team also, utilized UAV imaging, enabling the detection of various defects that geometry car cameras could not capture. These included buckling, cold runs, joint inspection, bridge inspection, etc.



Tech Stack

\ Azure

Solution Architecture



Value Delivered

Over 90% accuracy was achieved

by developing Deep Learning Models to extract key images.

Critical defects could be identified faster than ever before.



About Us

Tiger Analytics is a global leader in AI and analytics, helping Fortune 500 companies solve their toughest challenges. With over 4000 data technologists and consultants spread across offices in the US, Canada, UK, India, Singapore and Australia; we help our customers accelerate their AI and analytics journey in sectors like CPG, Retail, Insurance, BFS, Manufacturing, Life Sciences, and Healthcare. Tiger Analytics is a Great Place to Work-Certified and a 'Leader' in the Forrester Wave: Customer Analytics Services Report 2023.

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