Pragyan CTF – OSINT Challenge Detailed Write-up

This challenge provided a single image along with a narrative hint, asking the participant to identify a railway station and determine the correct station where one should have gotten down earlier. The solution relied heavily on OSINT techniques such as image analysis, reverse searching, video correlation, and logical interpretation of hints.

1. Initial Image Analysis

At first glance, the image showed a railway track with a sharp curve, overhead electric lines, concrete structures near the tracks, and dense greenery in the surroundings. These features suggested a coastal or semi-tropical railway environment, which immediately pointed toward southern India, particularly Kerala.

2. Google Lens and Regional Identification

I used Google Lens on the image to gather more context. The results repeatedly pointed toward railway locations in Kerala. This significantly narrowed down the search space and confirmed that the initial geographical assumption was correct.

3. Video Correlation and Timestamp Analysis

To further validate the location, I searched for railway route videos from Kerala and came across a YouTube video (https://youtu.be/zUfI0HwKgKg). Around the 5:15 timestamp, the video showed a railway station environment that closely matched the challenge image.

- A sharply curved railway track identical to the one seen in the challenge image.
- Overhead electric lines and pole placements matching the same pattern and spacing.

- A similarly constructed concrete structure near the tracks (possibly a power house or utility building).
- Visible structural markings on the building in the video, labeled '543 3B', which closely resembled markings seen in the challenge image (noted as '559 / 2').
- The overall environment, including vegetation, platform layout, and track alignment, strongly indicated the same railway corridor.

These consistent visual clues served as a strong hint that the investigation was on the right track. Based on the video and surrounding context, the station was identified as Kollam Junction Railway Station.

4. Interpreting the Challenge Hints

Despite the strong match with Kollam Junction, the challenge explicitly stated that the participant was supposed to get down one stop earlier. Additionally, the flag format hint mentioned that station names containing multiple words should be separated using an underscore. This strongly suggested that Kollam Junction itself was not the final answer.

5. Final Deduction and Flag Submission

Taking these hints into account, I examined nearby stations that come before Kollam Junction on the same railway route. Among them, Varkala Sivagiri stood out as a two-word station name and fit perfectly with the logical progression of the route. I submitted the flag in the required format: **p_ctf{varkala_sivagiri}** The submission was accepted successfully, confirming that Varkala Sivagiri was the correct answer.

Conclusion

This challenge was an excellent demonstration of OSINT-based problem solving. It required careful observation, correlation across multiple sources, attention to small structural details, and correct interpretation of subtle hints rather than brute-force guessing.