Relative Distance Normalization: Average + Max Approach

1. Concept

* To understand how today’s distance compares to your recent training, we normalize it based on recent history.
* Both average distance and maximum distance over a recent period (e.g., last 28 days) can provide context.

1. Steps

* Collect distances over a recent window (e.g., last 28 days).
* Compute:
  + Average distance (Acute or Chronic EWMA or simple mean).
  + Maximum distance over the same window.
* Normalize today’s distance using both:
  + Relative to average: distance\_today / average\_distance
  + Relative to max: distance\_today / max\_distance

1. Why combine average + max?

* Average gives a sense of typical load.
* Maximum accounts for peak adaptation: you can tolerate occasional high distances.
* Combining both allows scaling today’s distance in context, preventing overload while reflecting recent training capacity.

1. Example

* Last 28 days distances (km): [5, 6, 8, 12, 15, 7, 6, 10, 20, 5]
* Average = 9.5 km
* Max = 20 km
* Today ran 15 km
  + Relative to average: 15 / 9.5 ≈ 1.58
  + Relative to max: 15 / 20 = 0.75
* Interpretation: today was 58% above your typical distance but only 75% of your recent maximum, giving a balanced view of load.

1. Takeaways

* Normalizing to recent average and max provides context-sensitive distance scaling.
* Useful for training load calculations and avoiding overload.