UltraInsight: Analyzing Paces, Ages, and Trends in Ultramarathon Finishers

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Description:

▶ What are the average paces sustained over ultramarathons for finishers?

▶ What are the average paces of the top 20% of the field in each race distance?

▶ What year(s) had the most finishers with paces in the top 20% of the field?

▶ What outliers are there with pace for finishing certain distance ultramarathons?

Prior Work Done:

- Masters athletes were examined for peak age and performance trends via pace and other measures for 24 hour ultramarathons over a 13 year [study](#)

- Successful finishers of ultramarathons were assessed for performance in over 2000 100km races over 59 years to find out running speed and ages of finisher trends over the years in a [worldwide study.](#)

- Pacing strategies of male elite and age group ultramarathoners were examined for trends related to age and race distance through this [ultramarathon study](#).

Dataset:

- Dataset Title: "The big dataset of ultra-marathon running"
- Found on: Kaggle at this URL: https://www.kaggle.com/datasets/aiaiaidavid/the-big-dataset-of-ultra-marathon-running
- Data Comes From: David, Kaggle Contributor
- This dataset is downloaded on my machine

Proposed Work:

- Data Cleaning:
  - Remove entries that have blank attribute cells
  - Verify information is correct via manually looking up random sample of races finisher data, if not remove it
- Data Preprocessing:
  - Reduce dataset to past 10 years of races
  - Add an age column
  - Remove timed races to run stats on measured distance races only
  - Convert all distances to kilometers

List of Tools:

- Excel for basic file reading
- The class textbook for equations relating to attribute measures
- Python for coding
  - Standard data analysis tools in Python such as numpy, pandas, matplotlib

Evaluation:

- Compare to other similar work done on subject
- Double check the plausibility of the results using other well-known sources