

The background features abstract, overlapping green geometric shapes in various shades, creating a modern and dynamic feel. The shapes are primarily triangles and polygons, some with thin white outlines, set against a white background.

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

By Claire Lueking

Description:

- ▶ What are the average paces sustained over ultramarathons for finishers?
- ▶ What are the typical ages of those that finish ultramarathons in the top 20% of the field?
- ▶ What year(s) had the most finishers with paces in the top 20% of the field?

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