

Situated Visualization in Motion for Swimming

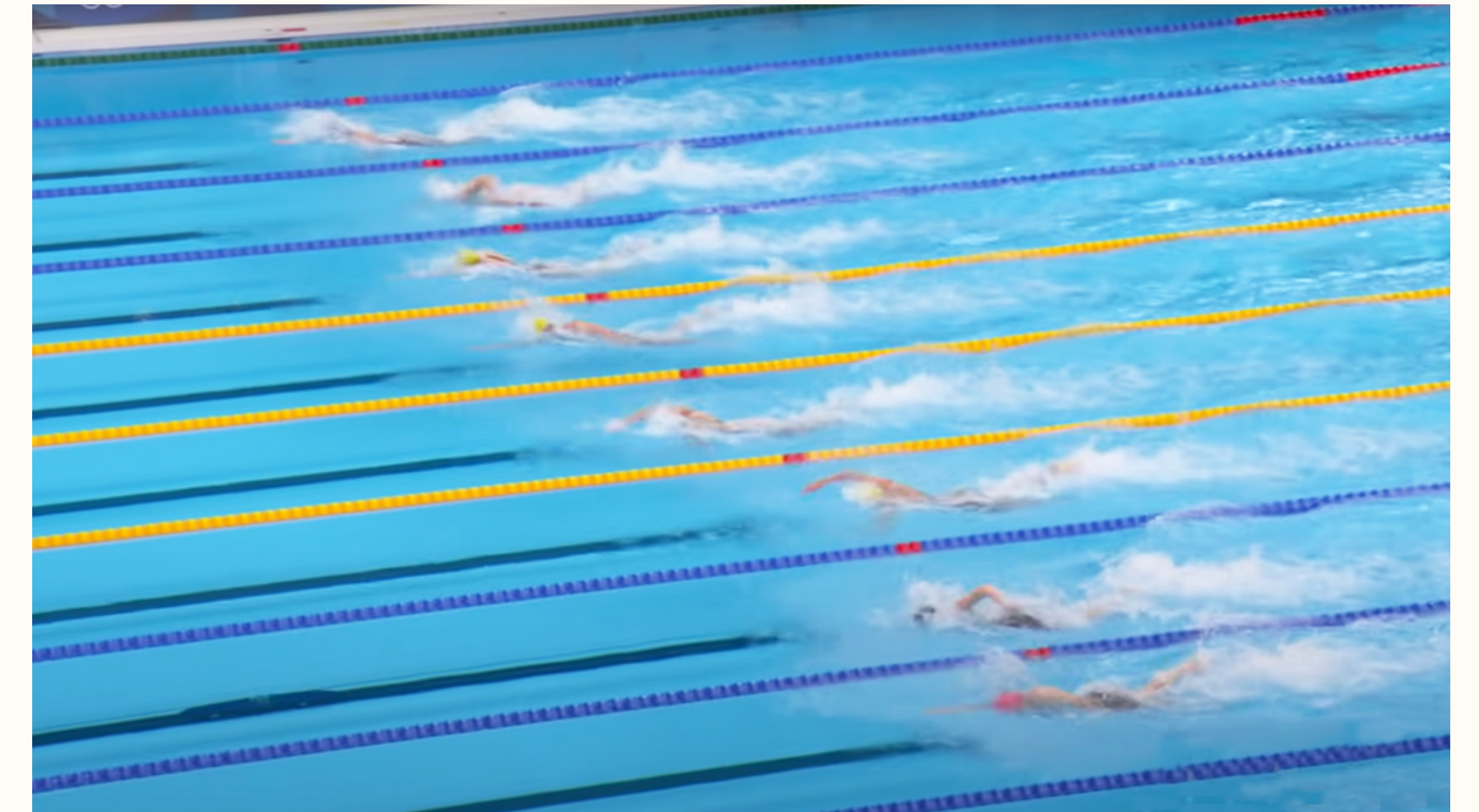
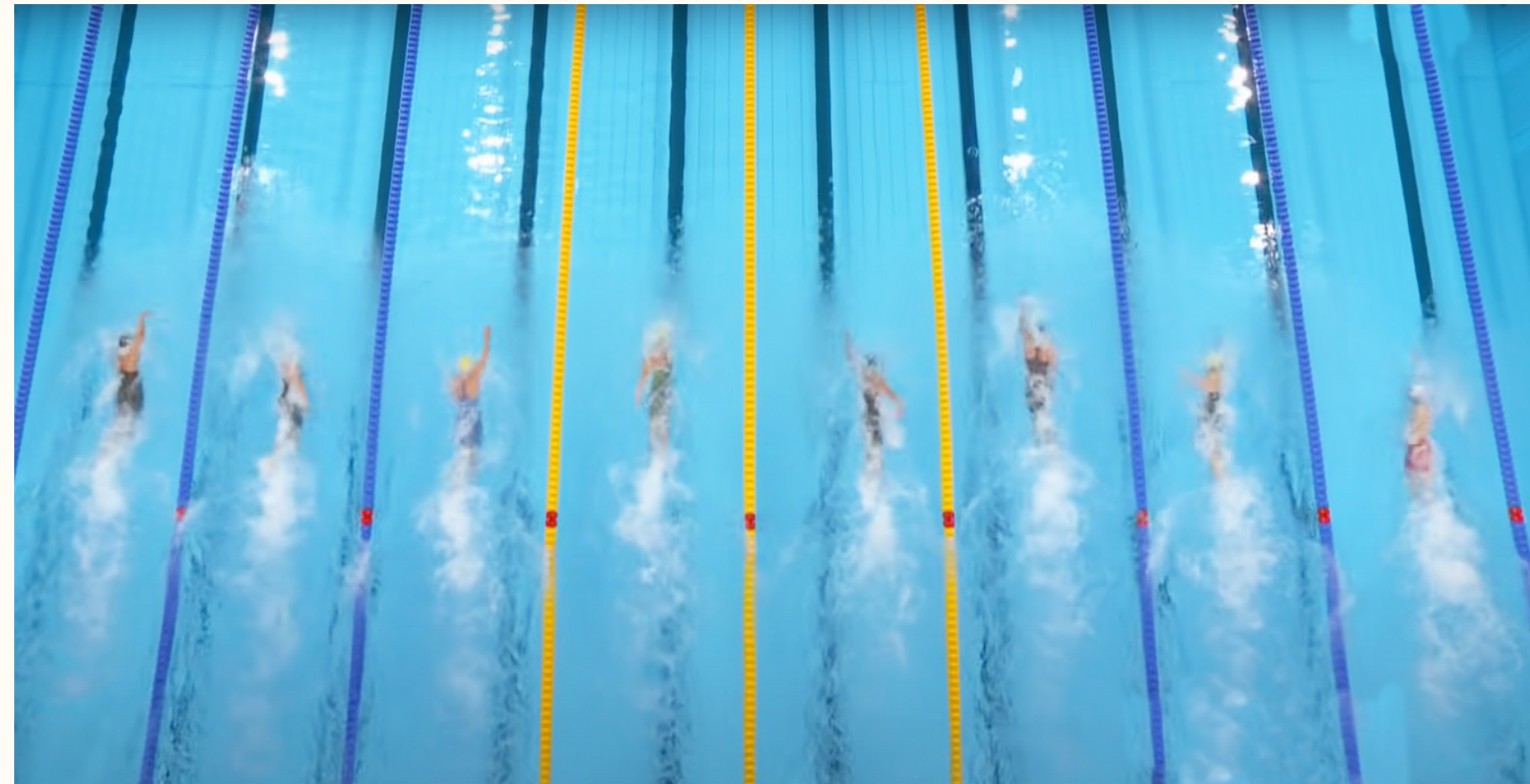
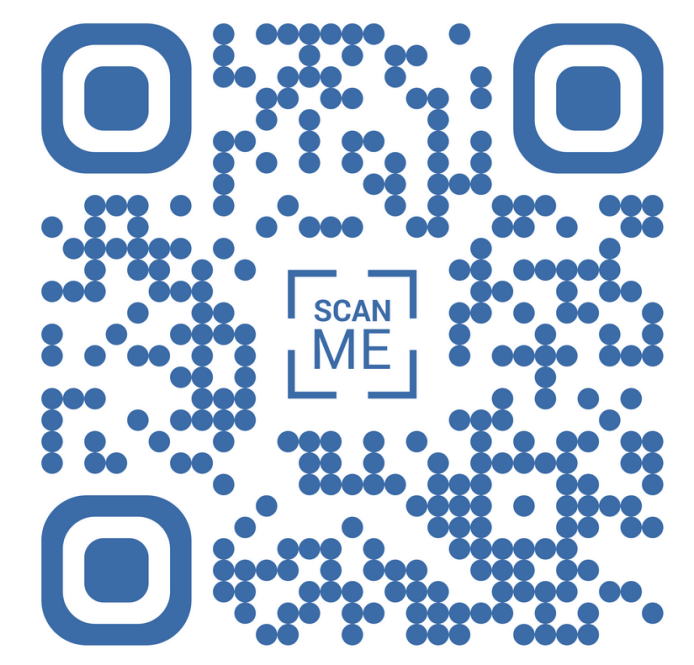
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Visualization in Motion

What is visualization in motion?

Visualizations in motion are visual data representations used in contexts that exhibit relative motion between a viewer and an entire visualization.

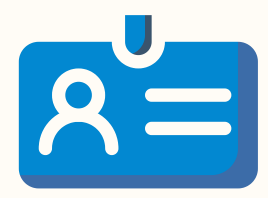
Learn more:



Swimming Visual Analytics

- Audiences are interested in seeing data.
- Rich dynamic data is available.
- Real-time moving graphics are now possible.

Data items

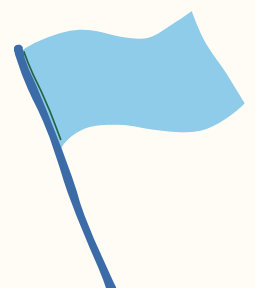


Swimmers-related: nationality, name, lane number, current speed, distance swam.

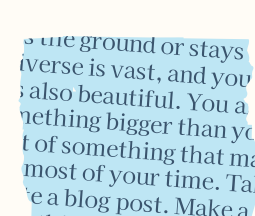


Temporal-related: records, time spent, elapsed time difference.

Representations



Symbols: nationality flag.

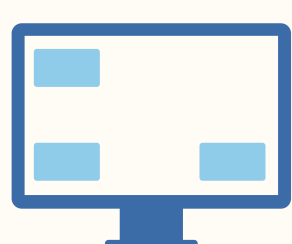


Text: lane numbers, names, times, speeds, distances.

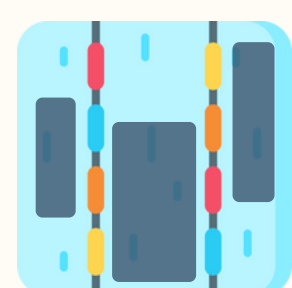


Line marks: world record, Olympic record.

Display positions

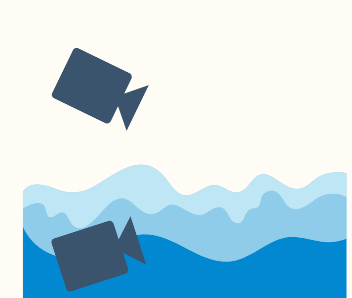


Corners of the screen: top left, bottom left, bottom right.



Embedded in the swimming pool.

Camera positions & perspectives



Camera positions: in the air or underwater.



Perspectives: bird's-eye view, side view, diagonal view.

Work in Progress: A Survey

- To explore which kind of data is general audiences interested in.

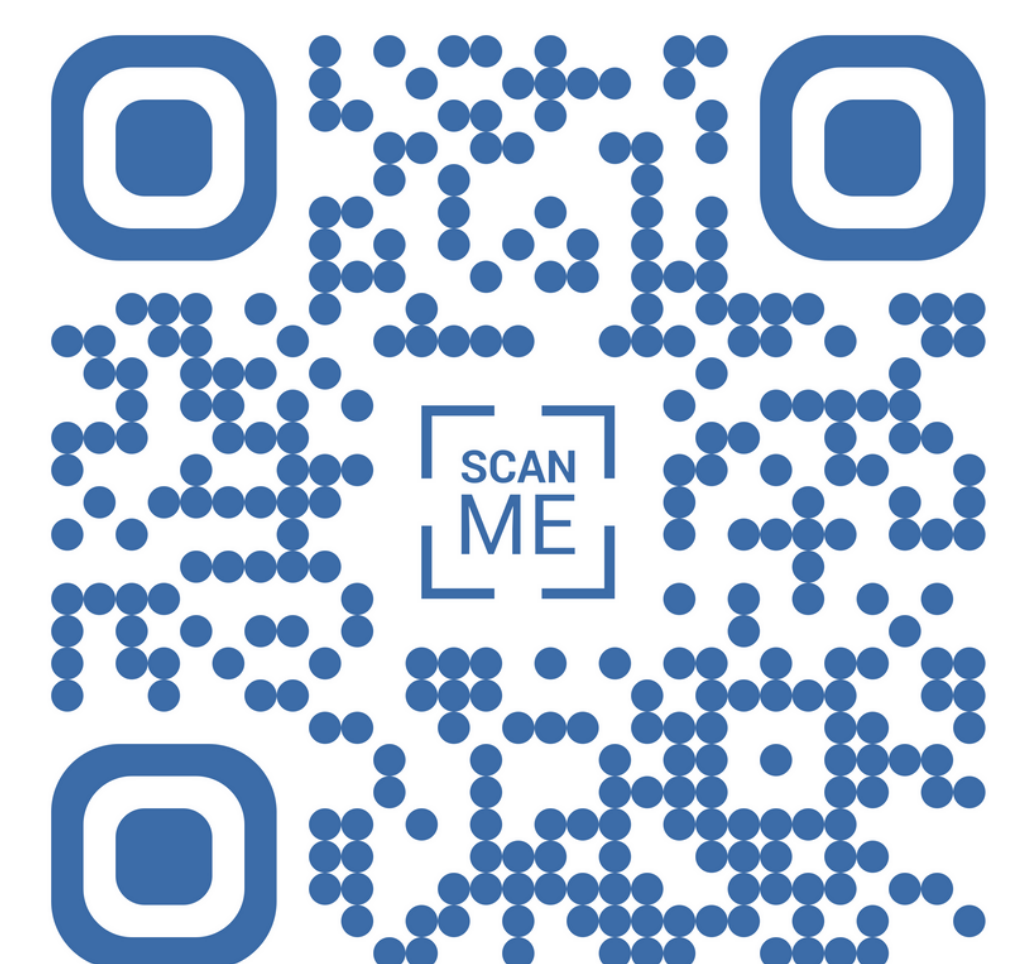
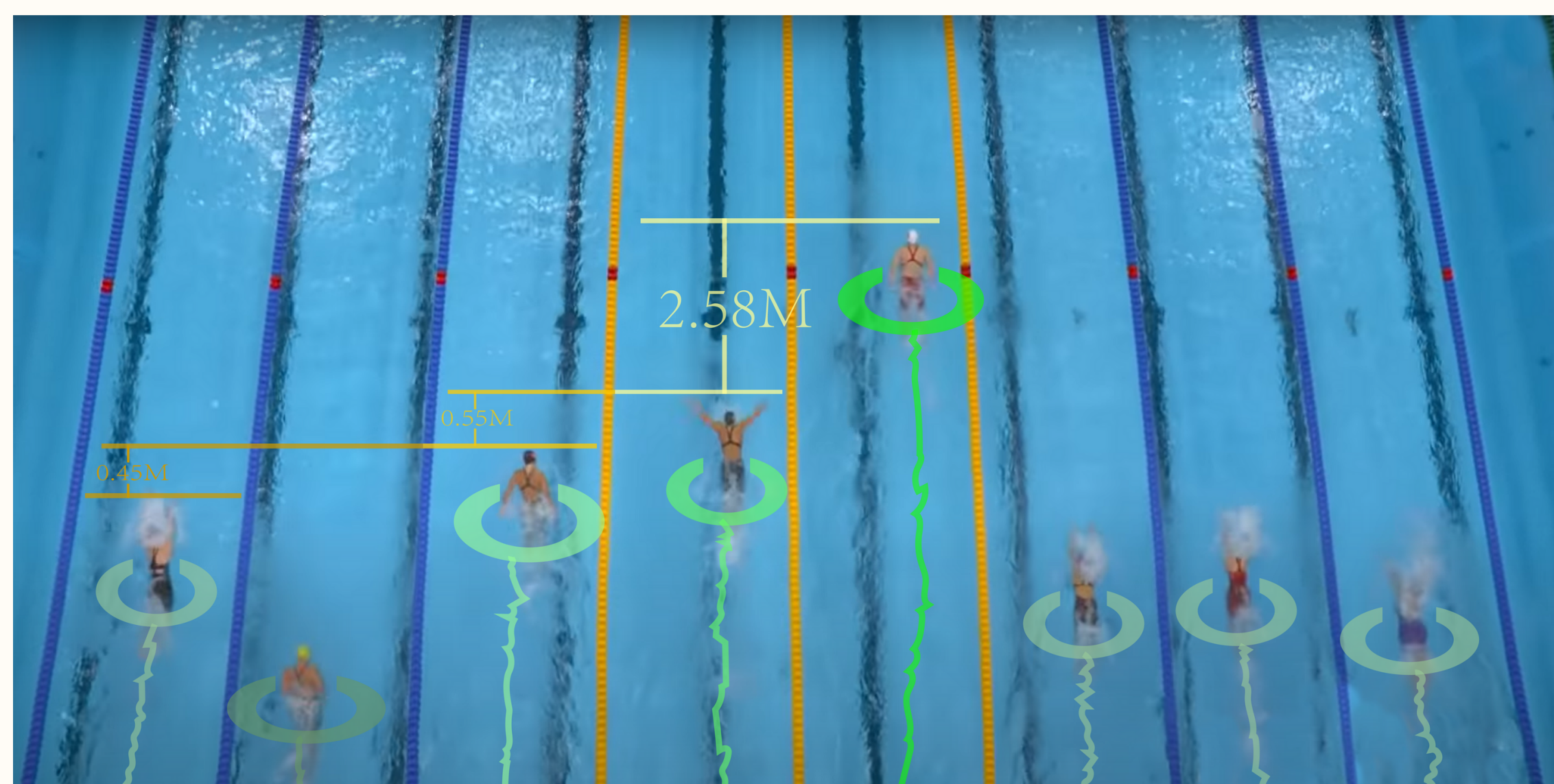
Work in Progress: Design Workshop

- Currently, the majority of the data is represented in a stationary way in swimming races. Examples include swimmers' names embedded in the swimming pool (see the figure below - left).
- Moving visualization designs are simple and limited to speed text and record line marks (see the figure below - right).



Future Work

- We are now working on a prototype.
- We will apply our survey findings to our prototype.
- We will embed the most interesting data next to the swimmers, with representations generated from our design workshop (as a mockup below).
- If you watch swimming races regularly and would like to improve watching experience, **do our survey** right now!



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