Situational Facts

- Sports: “Paul George had 21 points, 11 rebounds and 5 assists to become the first Pacers player with a 20/10/5 (points/rebounds/assists) game against the Bulls since Detlef Schrempf in December 1992.”
- Social Media: “The social world’s most viral photo ever generated 3.5 million likes, 170,000 comments and 460,000 shares by Wednesday afternoon.”
- Stock Data: Stock A becomes the first stock in history with price over $300 and market cap over $400 billion.
- Weather Data: Today’s measures of wind speed and humidity are x and y, respectively. City B has never encountered such high wind speed and humidity in March.
- Criminal Records: There were 50 DUI arrests and 20 collisions in city C yesterday, the first time.

A Mini-world of Basketball Gamelogs

- Wesley had 12 points, 13 assists and 5 rebounds on February 25, 1996 to become the first player with a 12/13/5 (points/assists/rebounds) in February.
- Wesley had 13 assists and 5 rebounds on February 25, 1996 to become the second Celtics player with a 13/5 (assists/rebounds) against the Nets.

Problem Definition

- Conventional skyline analysis: It is a single-scoring attribute.
- Constrained skyline analysis: It measures subspace.
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Algorithm BottomUp

- Stores a tuple for every such constraint that qualifies it as a contextual skyline tuple.
- Traverses the constraints in `C` in a bottom-up, breadth-first manner.

Total 6 comparisons in this scenario.

Algorithm TopDown

- Computation over full space is enough in finding skyline constraints in subspaces.
- Skips 3 comparisons.

Algorithm STopDown

- 8 dimension and 7 measure attributes.
- Weather Dataset: 7.8 million tuples of weather forecast from different locations of six countries & regions of the US.
- 7 dimension and 7 measure attributes.

Discovered Facts

- Lamar Odom had 30 points, 19 rebounds and 11 assists on March 6, 2004. No one before had a better or equal performance in NBA history.
- Allen Iverson had 38 points and 16 assists on April 14, 2004 to become the first player with a 38/16 (points/assists) game in the 2004-2005 season.
- Damon Stoudamire scored 54 points on January 14, 2005.
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