

My Research Project

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Combinatorial Fusion Analysis (CFA)

- Combines multiple sets of data in order to improve it
- Examples include:
 - Scoring systems
 - Protein Structure Prediction
 - Target Tracking

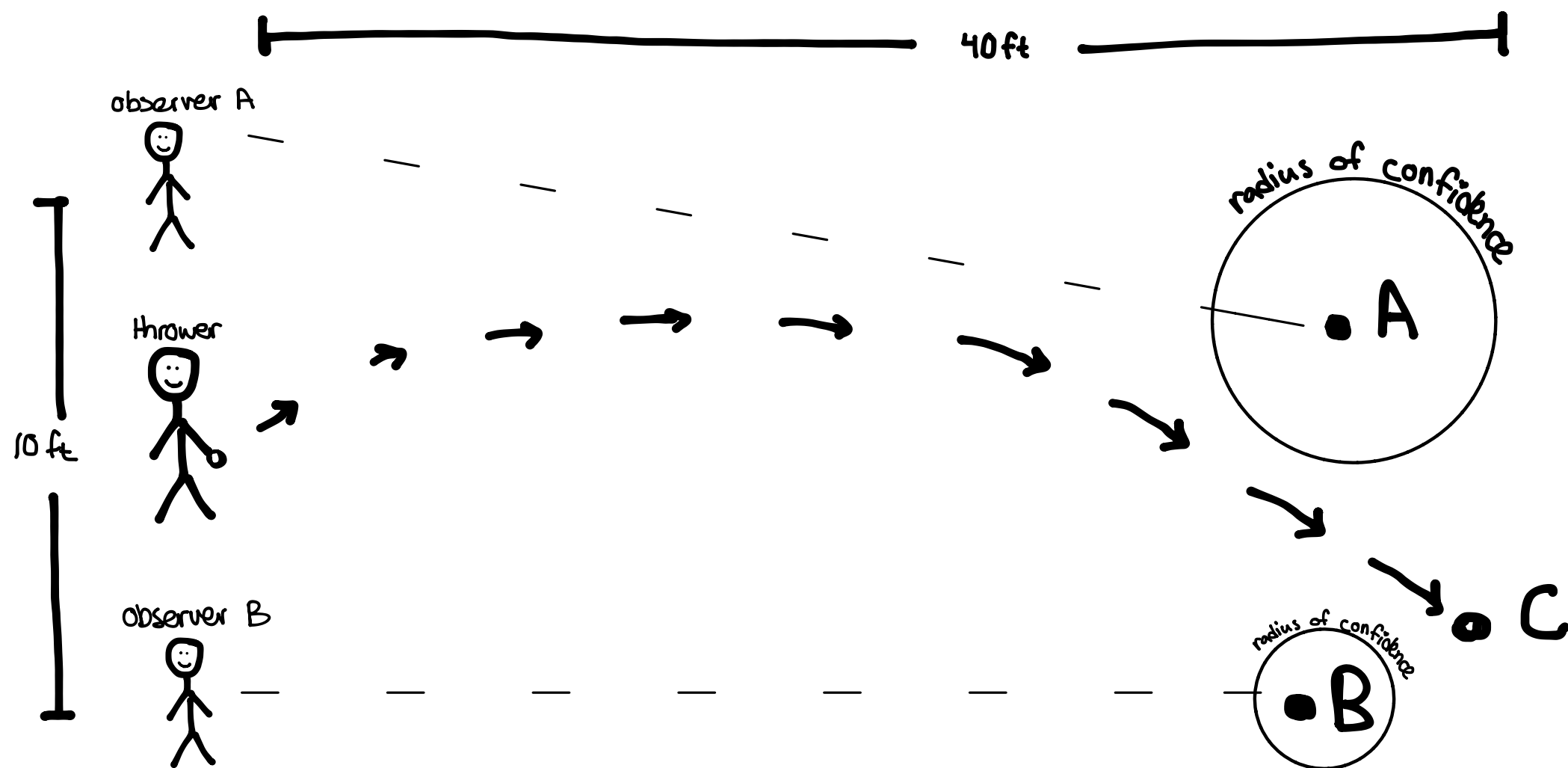
Example: Figure Skating



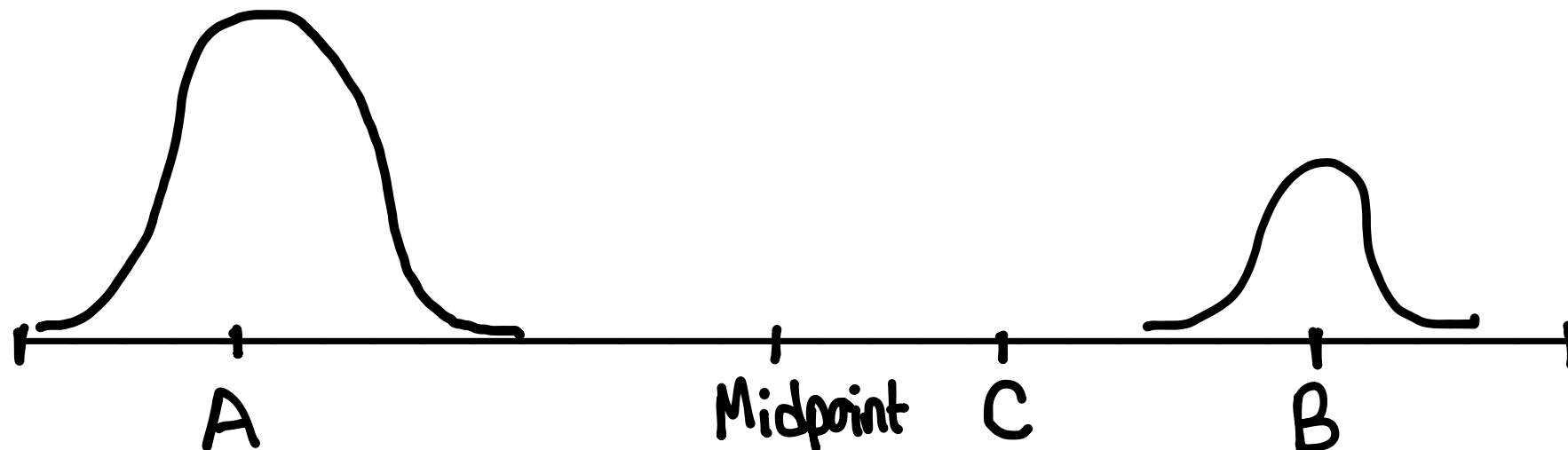
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Example: Visual Cognition System

- A man throws a coin 40 feet away
- Two observers say where they think the coin landed
- We want to combine their predictions to get the point closest to the landing point of the coin



- To combine the observers' information, we can use statistics or Combinatorial Fusion Analysis
- Statistically, we can find the midpoint
- Using CFA, we can score and rank points in the interval using each observer's data, and then combine the scores for each point and the ranks, in order to find the point closest to C using the given data



When Are Two Heads Better Than One?

- So far, results have shown that in some cases it is better to combine the information, and in some cases an individual is more correct
- By using CFA, we can examine cognitive diversity
- The goal is to determine the most effective way to combine two decision-making systems and produce the most correct answer