

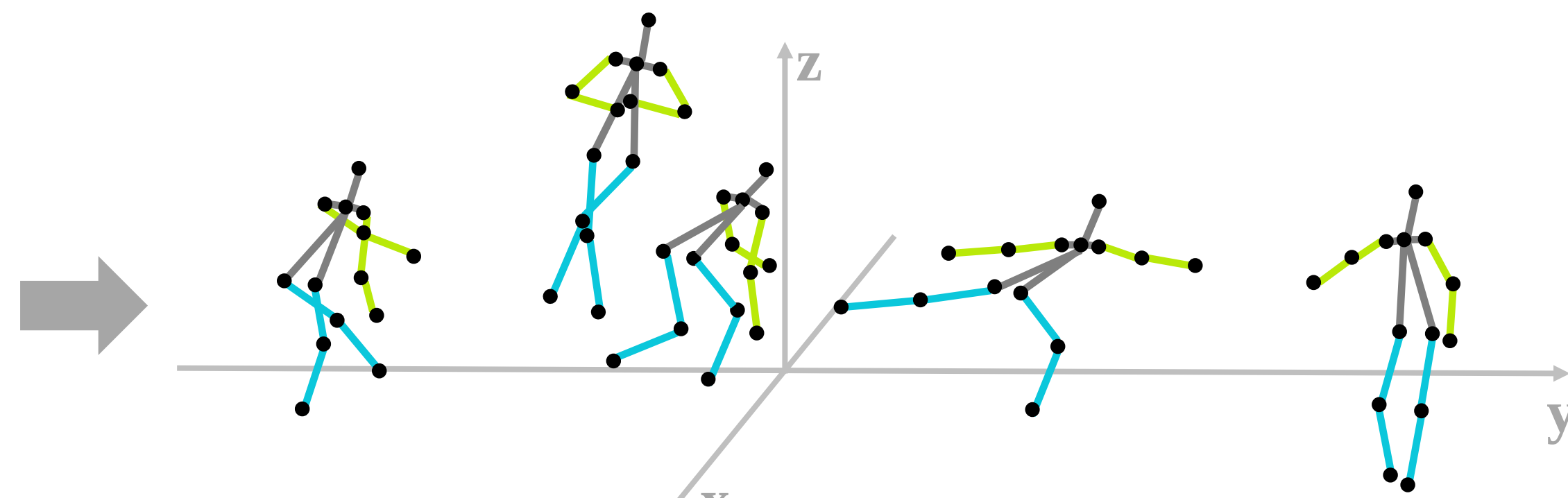
# Multi-view 3D Human Pose Reconstruction Based on Spatial Confidence Point Group for Jump Analysis in Figure Skating

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## Background



Figure skating videos

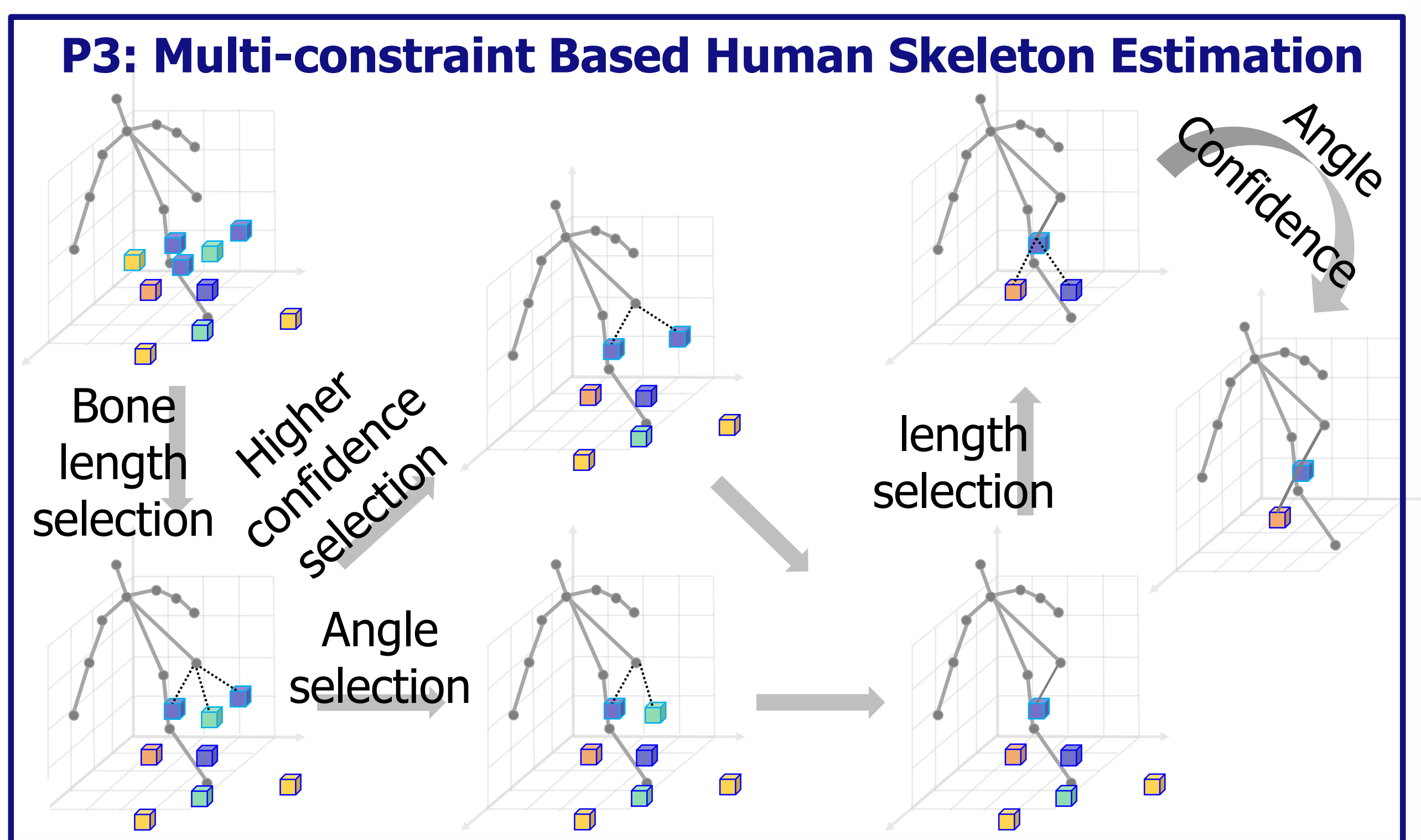
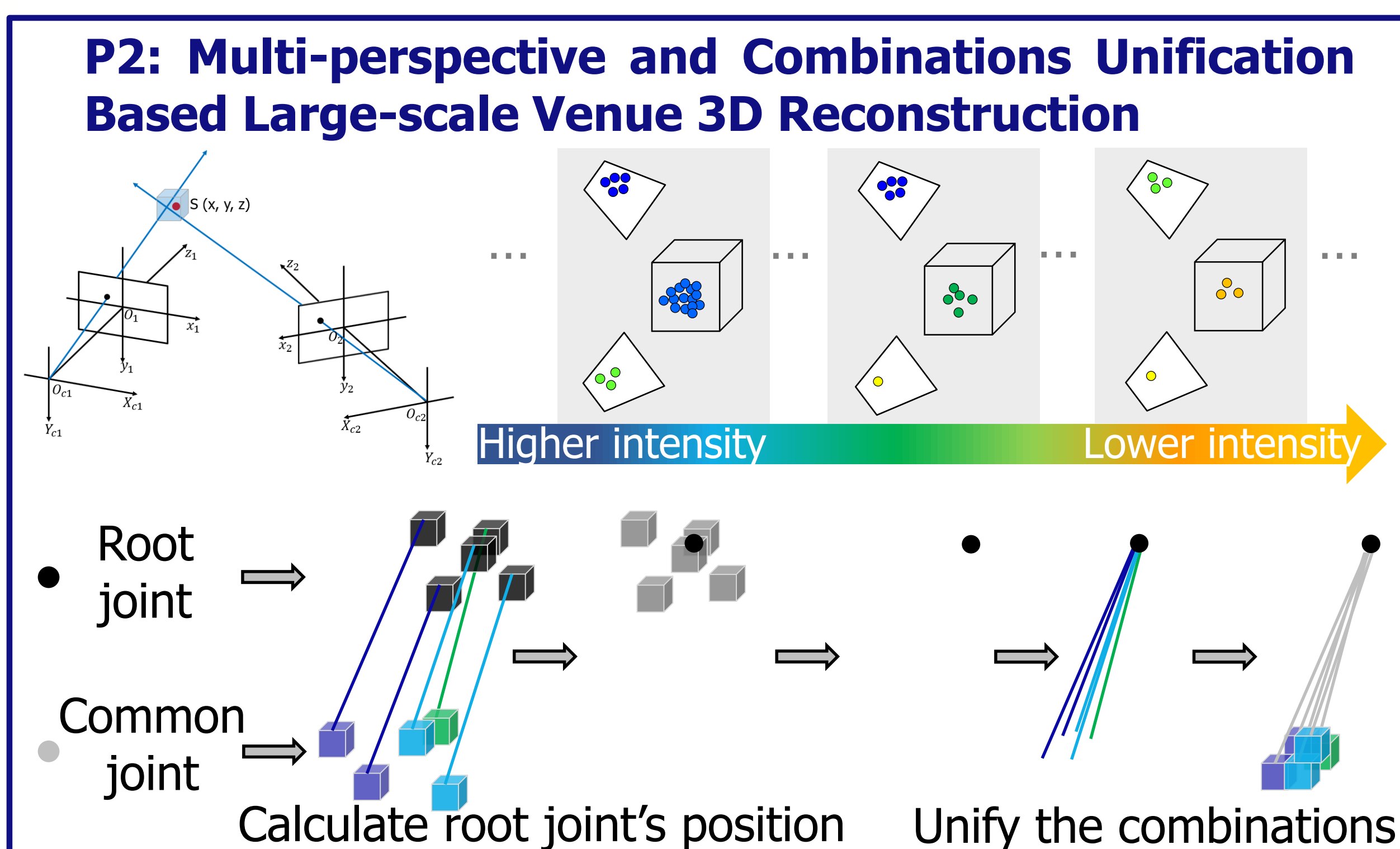
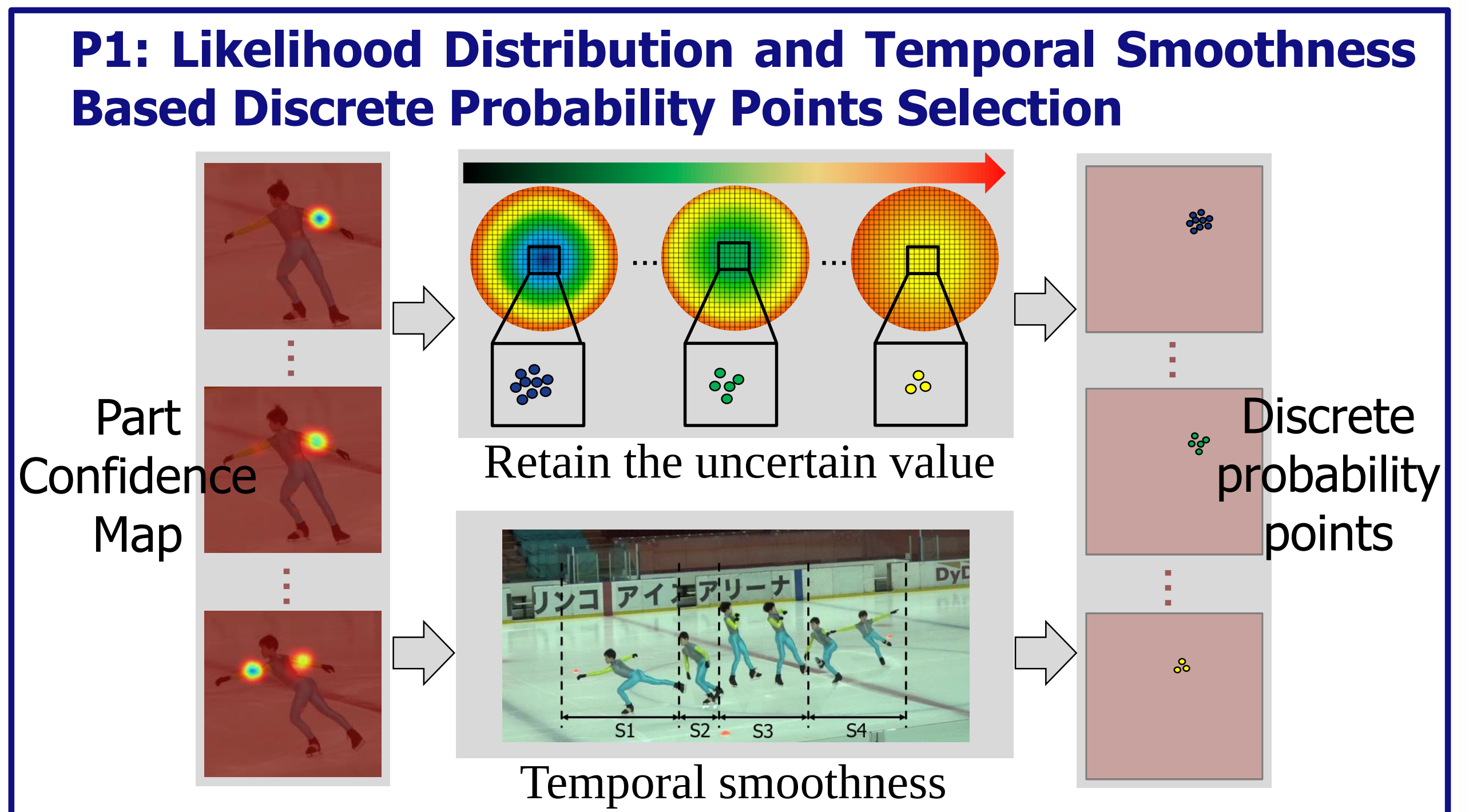
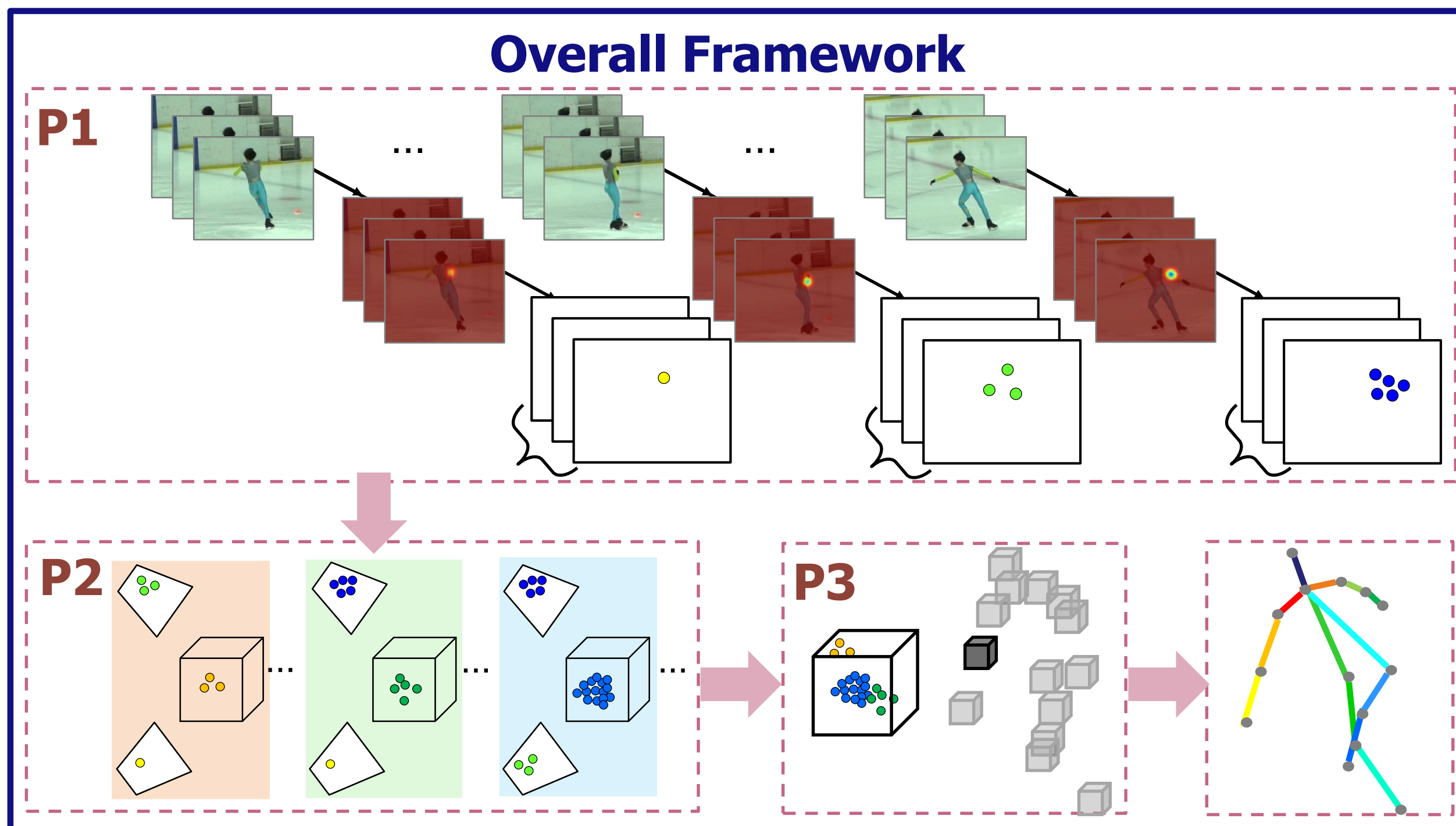


3D pose extraction

- Jump height
- Jump distance
- Spin speed
- Trajectory
- ...

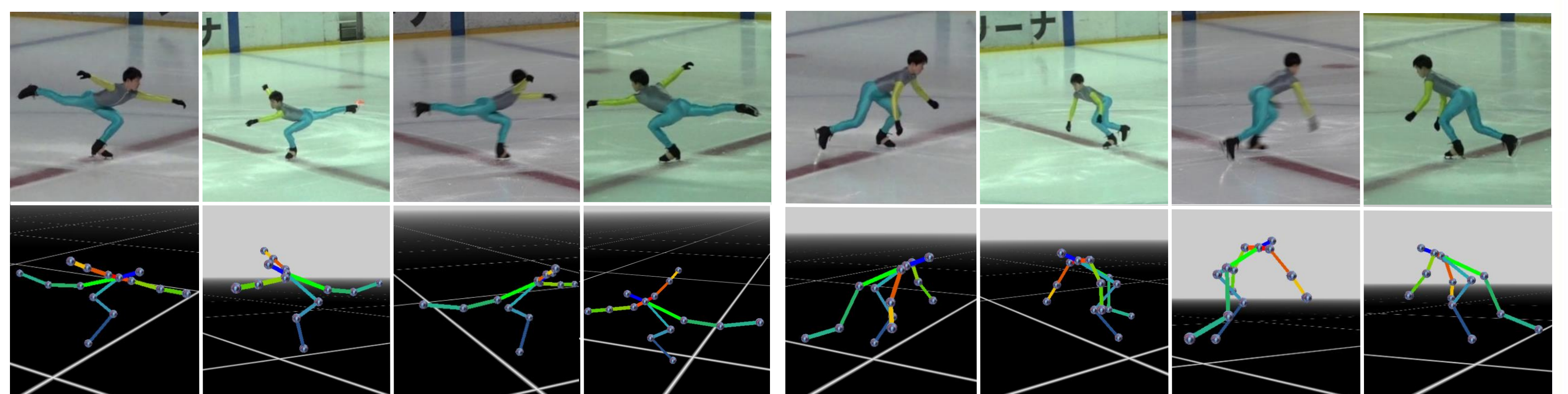
Valuable data

## Proposals



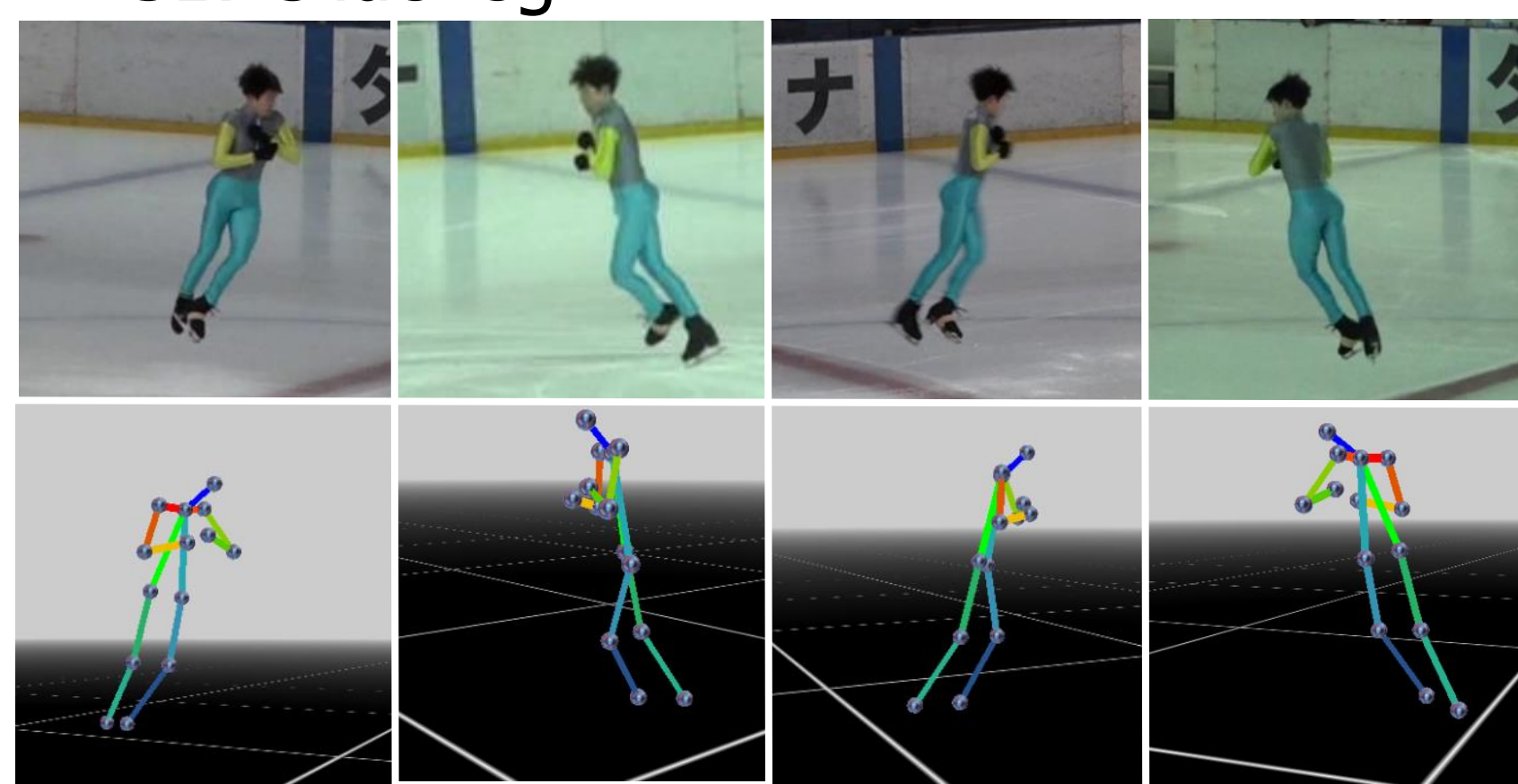
## Experiment result

| Item                            |            | Basic work   | CONV Work    | EXP Result   |
|---------------------------------|------------|--------------|--------------|--------------|
| Error range<br>[%]<br>@<br>30mm | Body parts |              |              |              |
|                                 | Upper      | 40.97        | 67.99        | 88.89        |
|                                 | Lower      | 38.73        | 72.95        | 95.08        |
|                                 | Total      | <b>40.01</b> | <b>70.11</b> | <b>91.55</b> |
| [%]<br>@<br>50mm                | Upper      | 47.98        | 69.08        | 90.26        |
|                                 | Lower      | 41.02        | 75.91        | 95.65        |
|                                 | Total      | <b>44.99</b> | <b>72.01</b> | <b>92.57</b> |
| [%]<br>@<br>70mm                | Upper      | 51.75        | 73.48        | 91.30        |
|                                 | Lower      | 43.04        | 77.00        | 96.15        |
|                                 | Total      | <b>48.02</b> | <b>75.09</b> | <b>93.38</b> |

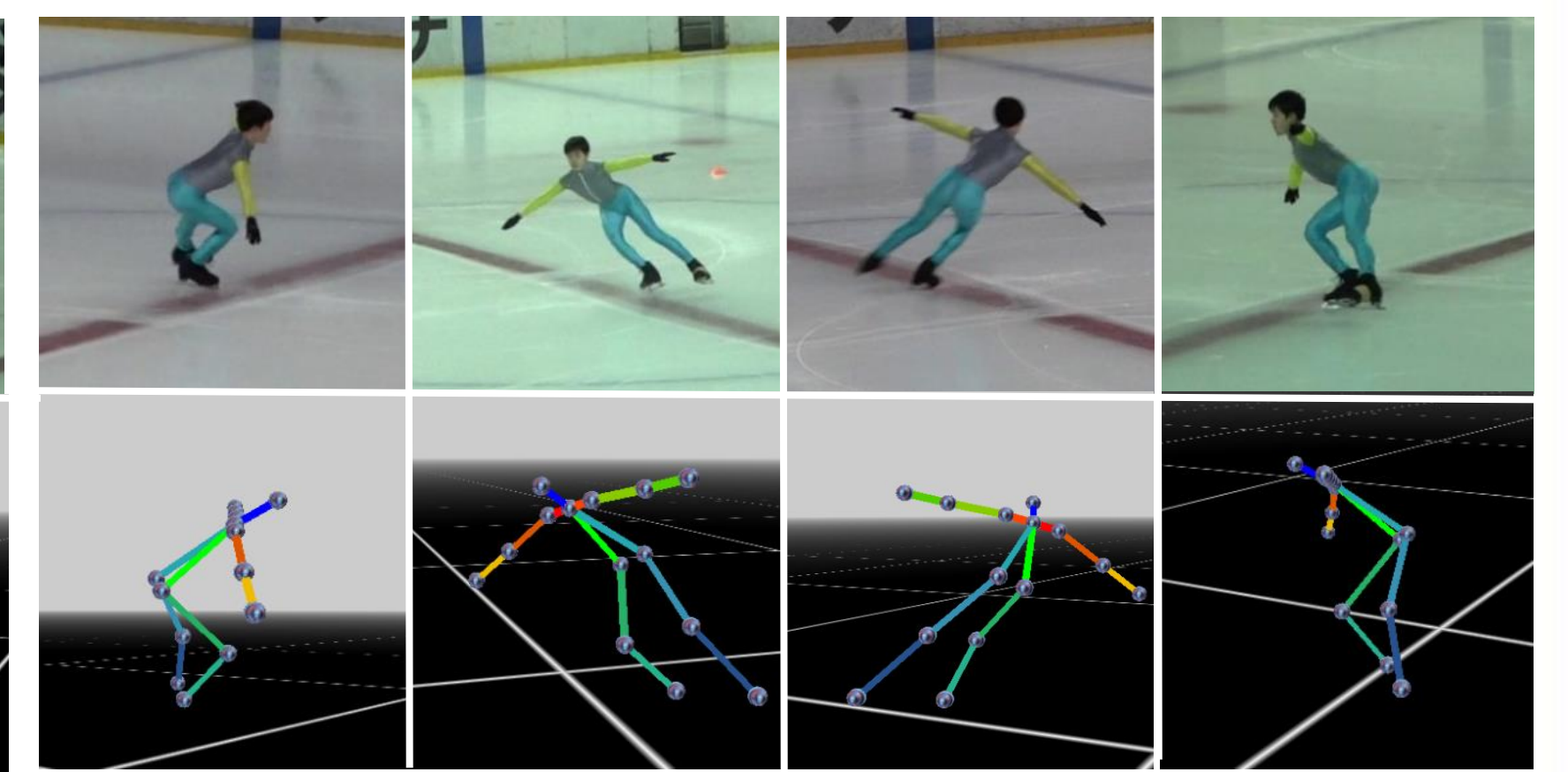


» S1: Glide leg

» S2: Take off



» S3: Spin in the air



» S4: Landing

## Conclusion

After three proposals, the final result is more than 90% accurate.



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