Let's Ski!

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Overview

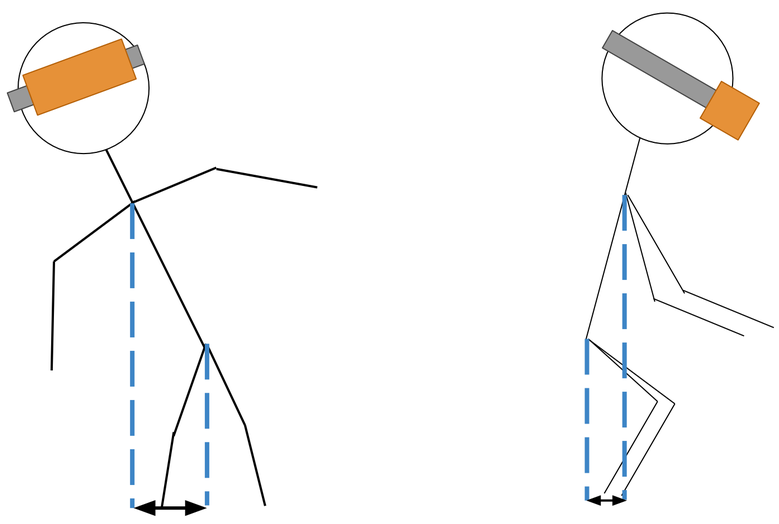
Let's Ski! is a multiplayer, virtual reality skiing simulator using Kinect motion detection and Mecanim character modelling. *When you move your body, your avatar moves too!*

Controls

Turn left, right *Tilt Left/Right*

Speed up/slow down *Lean Forward/Back*

Pair with next Kinect *Cardboard Click*



Tilt = (Avg. Shoulder Pos. - Avg. Hip Pos.)$_X$

Lean = (Avg. Shoulder Pos. - Avg. Hip Pos.)$_Z$

Objectives

1. Increase player control surface beyond single Cardboard button.
2. Use gesture control to broadcast player identity and social cues.

Future Work

1. Generate player skin from Kinect RGB.
2. Simplify process of pairing with the Kinect sensor.

Source Code

Visit //github.com/fatlotus/human-shell.git for code and build instructions.

Acknowledgements

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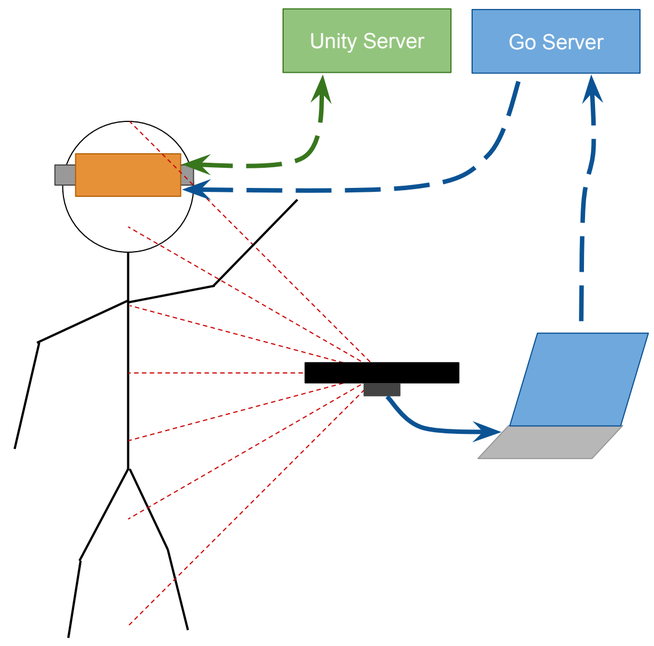
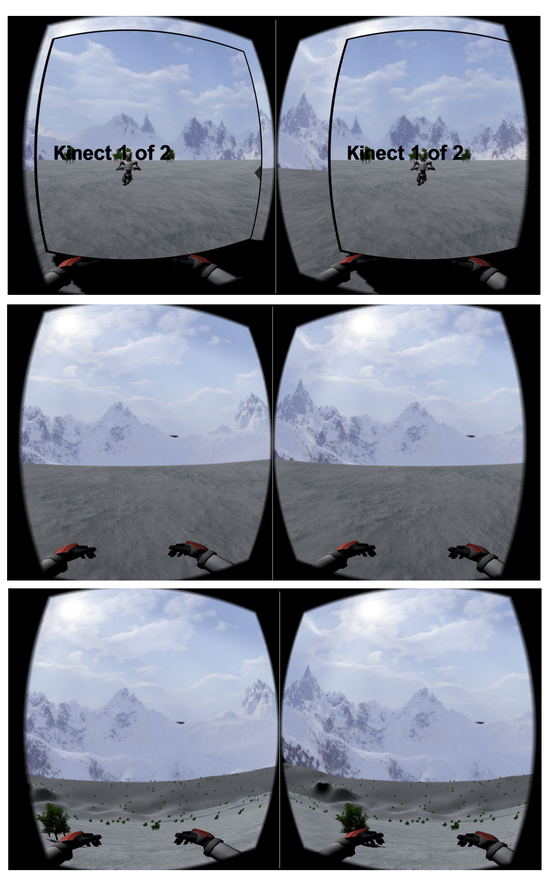
Hardware Architecture



(a) Skeleton transferred from Kinect to phone, via custom Go Server

(b) Motion sync'd via Unity HLAPI

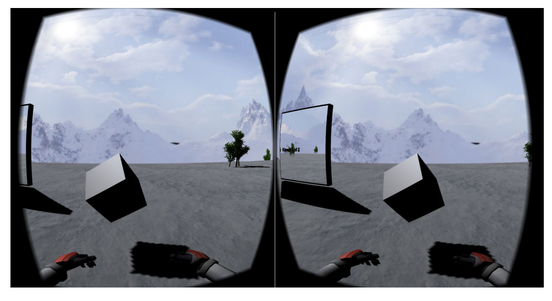
Gameplay



User chooses a Kinect in front of the mirror.

User turns around the mirror and starts down Mt. Mobile

"Oh no! Watch out for that tree!"



Once the player gets to the bottom, they are reset to the top.

Conclusions

1. Imprecise sensors are "good enough" to handle a basic sports application.
2. Though skeleton animation tools are not designed for real-time character creation, they can be adapted to create a reasonably good approximation.
3. The need to pair devices remains a barrier to more seamless integration.

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