Title

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Overview

Introduction

Examples

Itemize example

- Item 1
- Item 2

Table 1: Example of Table - Taxonomy of human intent prediction

Human		Execution Strategy (Action)	
		Observer Knows	Observer Unknown
Objective Function	Observer Knows	All is Known (e.g. Ping Pong) where both objective and actions are clear	Human Action Model is unclear or suboptimal (e.g. chess)
	Observer Unknown	Human action model is well known, but objective is not (e.g. joy-riding in car or free running, where destination or direction is unclear)	Poor action model and objective function (e.g. Poor / good cook, no idea of final dish)

- Tables can be referenced as Table 1

Example of a figure, shown in Figure 2.

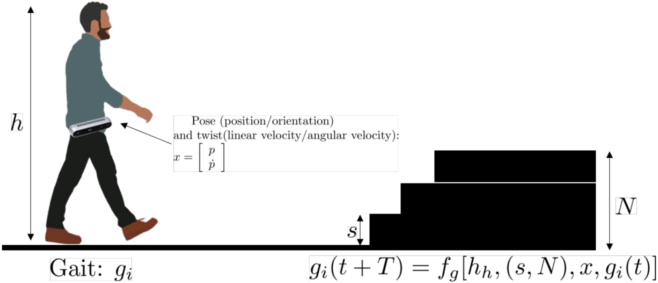
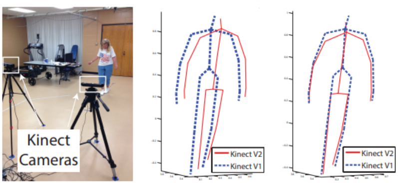


Figure 2: Example Figure

(a) Single Kinect setup for fall prevention in elderly residence [1]



(b) Multiple Kinects calibration for fall prediction[2]

Figure 3: Examples of Horizontal Subfigures

Example of Horizontal Alignment

Example of Horizontal Alignment of a `table` and a `figure`.

Table 2: Environment limitations on data collection

	Kinect	Stereo	Kinect + Stereo
Indoor	✓	✓	✓
Outdoor	✗	✓	✓
High number of features	✓	✓	✓
Low number of features	✓	✗	✓

Example of resizable equations

$$
\begin{aligned}
\text{min} \qquad & J = \int (a_{real} - \hat{a})^2 \\
\text{subject to} \qquad & \text{human kinematics} \\
& \text{no collision} \\
& \text{no falling}
\end{aligned}
$$

Example of Regular Equations

$$
{}^{A}R_{B}(t_0) = \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 0 \end{bmatrix} + \sin(\theta) \begin{bmatrix} 0 & -v_3 & v_2 \\ v_3 & 0 & -y_1 \\ -v_2 & v_1 & 0 \end{bmatrix} + (1-\cos(\theta)) \begin{bmatrix} 0 & -v_3 & v_2 \\ v_3 & 0 & -v_1 \\ -v_2 & v_1 & 0 \end{bmatrix}^2 \tag{1}
$$

$$
{}^{A}R_{B}(t) = \Delta R\, {}^{A}R_{B}(t_0) \tag{2}
$$

$$
\Delta R = {}^{A}R_{B}(t)\, {}^{A}R_{B}^{T}(t_0) \tag{3}
$$

Example of Video

Bibliography

[1] E. E. Stone and M. Skubic, "Fall detection in homes of older adults using the Microsoft Kinect," *IEEE journal of biomedical and health informatics*, vol. 19, no. 1, pp. 290–301, 2014. DOI: 10.1109/JBHI.2014.2312180. [Online]. Available: https://ieeexplore.ieee.org/abstract/document/6774430.

[2] A. N. Staranowicz, C. Ray, and G.-L. Mariottini, "Easy-to-use, general, and accurate multi-Kinect calibration and its application to gait monitoring for fall prediction," in *2015 37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)*, IEEE, 2015, pp. 4994–4998. DOI: 10.1109/EMBC.2015.7319513. [Online]. Available: https://ieeexplore.ieee.org/abstract/document/7319513/.