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Rodrigo Ibañez, Álvaro Soria, Alfredo Teyseyre, Guillermo Rodriguez, Marcelo Campo



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Approximate String Matching: A lightweight approach to recognize gestures with Kinect

Rodrigo Ibañez

Rodrigo Ibañez is with the Department of Software Engineer, ISISTAN Research Institute (CONICET-UNICEN), Tandil, Argentina, e-mail: rodrigo.ibanez@isistan.unicen.edu.ar.

Alvaro Soria*

Álvaro Soria is with the Department of Software Engineer, ISISTAN Research Institute (CONICET-UNICEN), Tandil, Argentina, e-mail: alvaro.soria@isistan.unicen.edu.ar.

Alfredo Teyseyre

Alfredo Teyseyre is with the Department of Software Engineer, ISISTAN Research Institute (CONICET-UNICEN), Tandil, Argentina, e-mail: alfredo.teyseyre@isistan.unicen.edu.ar.

Guillermo Rodriguez

Guillermo Rodriguez is with the Department of Software Engineer, ISISTAN Research Institute (CONICET-UNICEN), Tandil, Argentina, e-mail: guillermo.rodriguez@isistan.unicen.edu.ar.

Marcelo Campo

Marcelo Campo is with the Department of Software Engineer, ISISTAN Research Institute (CONICET-UNICEN), Tandil, Argentina, e-mail: marcelo.campo@isistan.unicen.edu.ar.
ISISTAN Research Institute (CONICET-UNICEN), Campus Universitario, Paraje Arroyo Seco, Tandil, Buenos Aires, Argentina

Abstract

Innovative technologies, such as 3D depth cameras, promote the development of natural interaction applications in many domains among large audiences. In this context, supervised machine learning techniques have been proved to be a flexible and robust approach to perform high level gesture recognition from 3D joints provided by these depth cameras. This paper proposes a lightweight approach to recognize gestures with Kinect by utilizing approximate string matching. The proposed approach encodes the movements of the joints as sequences of characters in order to simplify the gesture recognition as a widely studied string matching problem. We evaluated our approach by applying – other widespread used techniques in the research field. The experimental evaluations show that the proposed approach can obtain relatively high performance in comparison with the state-of-the-art machine learning techniques. These findings

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