**Research Question:** How to recognize the (single) current activity of a person in real-time, by using the semantics of ontologies?

**Contributions**
- Activity recognition in real-time
- Propositionalization of an ontology
- Large-scale datasets are supported

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The object-properties of a Case

∀ $S \in \text{subclasses}(C)$

\[
\text{value}(S) = \begin{cases} 
1, & \text{if } S \in \text{superclasses}(a) \\
0, & \text{else}
\end{cases}
\]

where

$C \in \text{range}(P)$,

$P \in \text{properties of the Case class and } a = \text{instance}(C)$.

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Reducing the Dataset

**Reducing the number of attributes:**
for each subclass $S$ (not only direct) of a given objectproperty’s range class
if $S$ only has one father $F$ and $F$ is marked
add $S$ to the attributes
else
mark $F$ /* this actually means skip $F$ */

**Reducing the number of cases:**
- Set a threshold for the number of cases
- When this threshold is met delete half of the cases
  - randomly
  - keeping the original distribution ratio as much as possible

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**Future Work**
- Validation of the predictions
- Smart Classroom (activity of a group)
- Ambient Assisted Living (assistance of the elderly)

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