

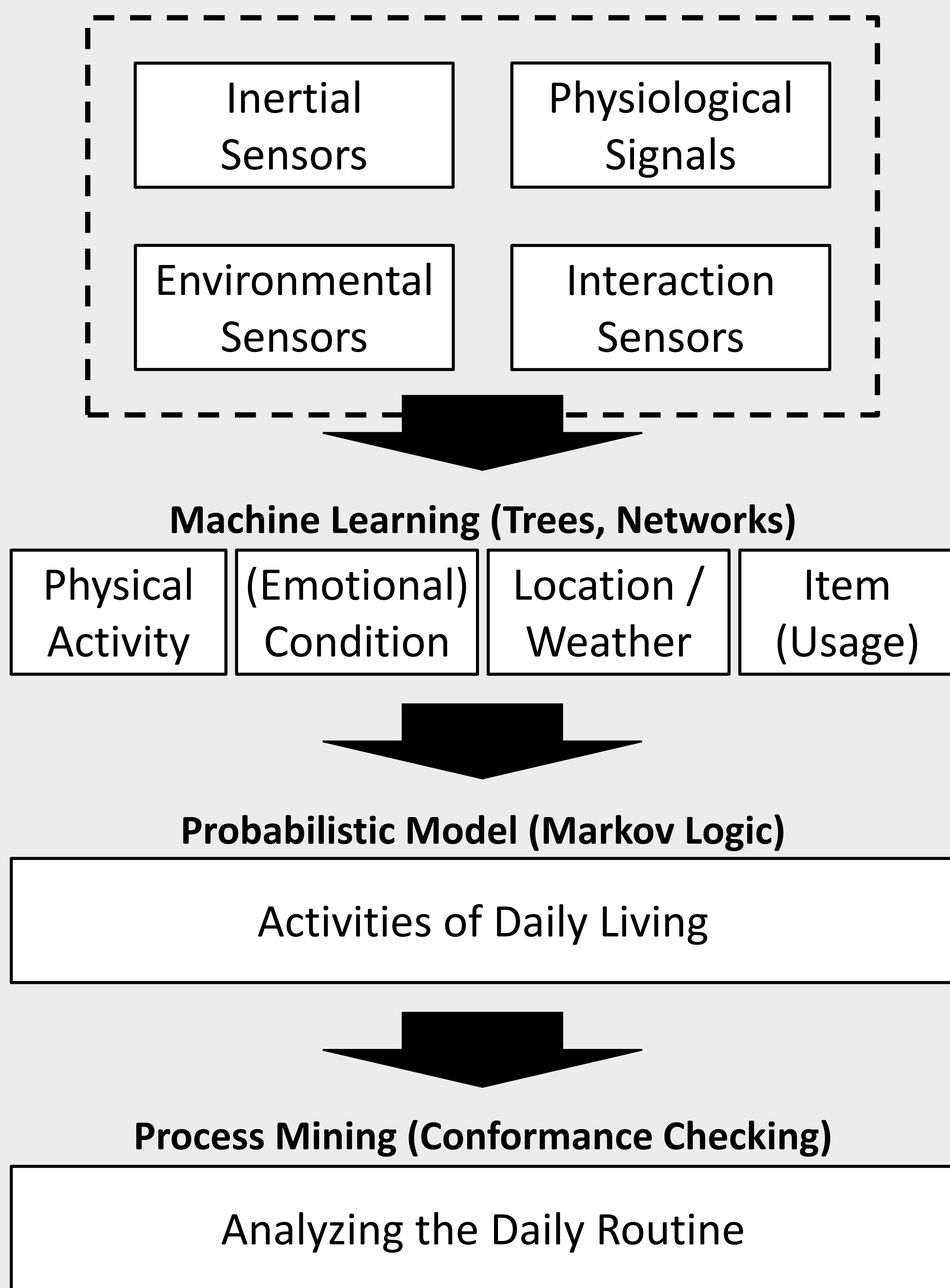
Towards Real World Activity Recognition from Wearable Devices

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Idea



Research Issues

- Physical Human Activities (Wearable Devices)
 - varying device position
 - movement behavior may change
 - cross-subjects activity recognition
- Activities of Daily Living
 - indoor vs. outdoor
 - level of activity (grooming vs. shower)
 - availability of context information

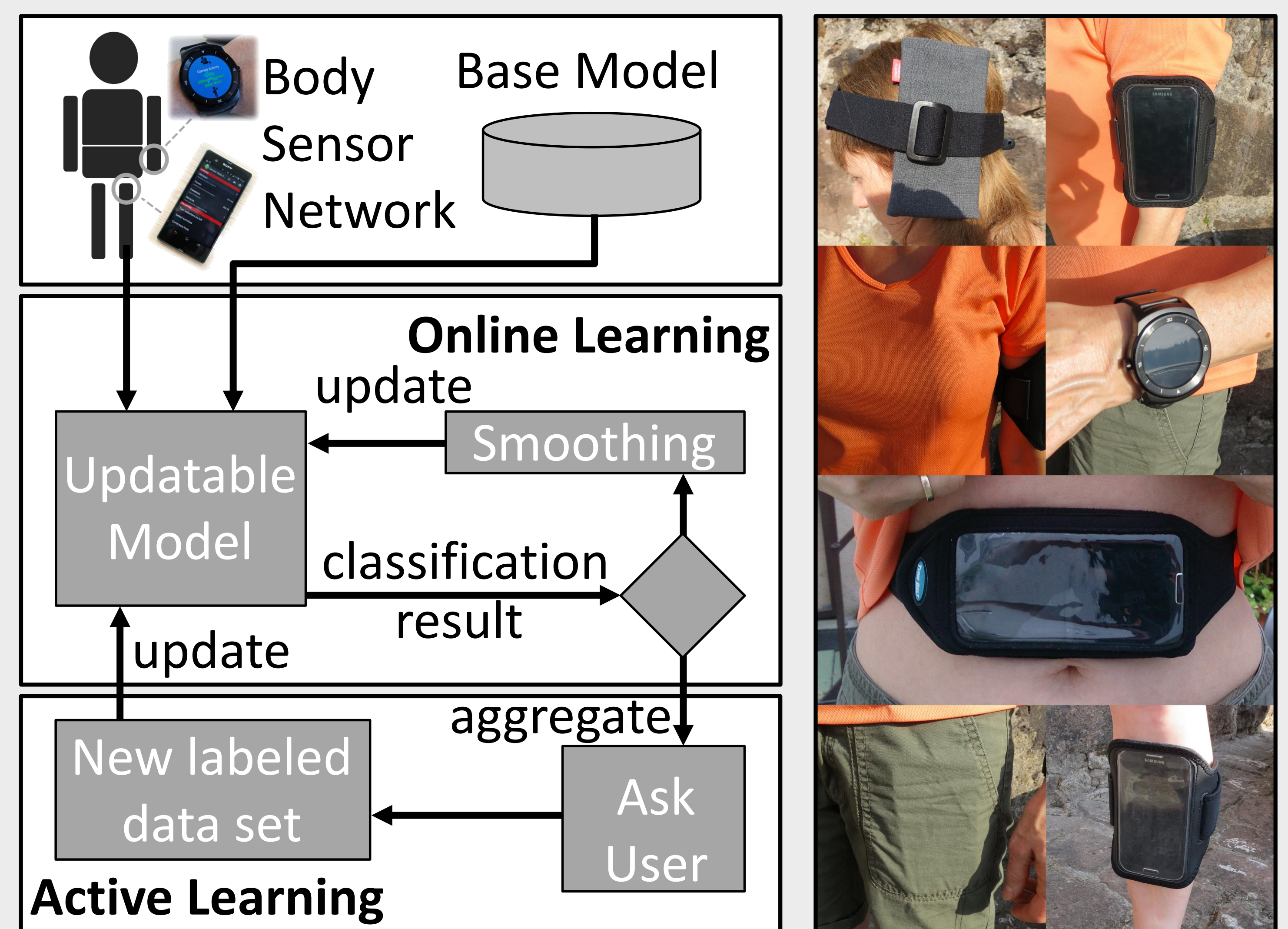
Definition

ADLs embody a fusion and interpretation of single physical human activities, also known as locomotions, related to the current environment and situation.

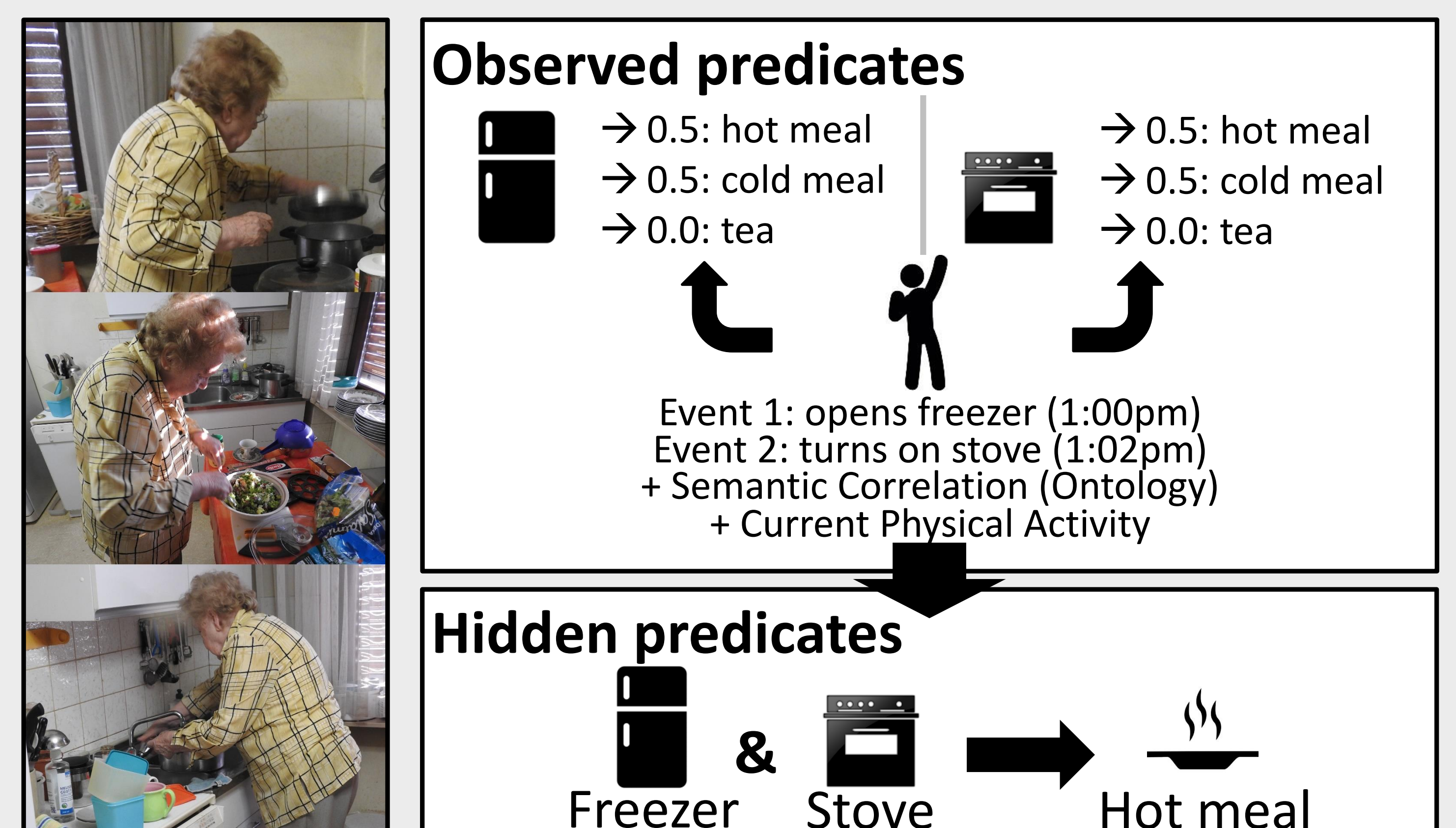
Scenario

- supporting and observing elders in everyday activities by interpreting and relying on ...
 - ➔ smart devices, environmental influences, location and time, context-dependent

Physical Human Activities [1,2]



Activities of Daily Living (Smart-Home) [3]



References

- [1] T. Sztyler and H. Stuckenschmidt, "On-body localization of wearable devices: An investigation of position-aware activity recognition", in 2016 IEEE International Conference on Pervasive Computing and Communications. IEEE, 2016, pp. 1–9.
- [2] T. Sztyler and H. Stuckenschmidt, "Online personalization of cross-subjects based activity recognition models on wearable devices", 2017, (Under Publication)
- [3] D. Riboni, T. Sztyler, G. Civitarese, and H. Stuckenschmidt, "Unsupervised recognition of interleaved activities of daily living through ontological and probabilistic reasoning", in Proceedings of the 2016 ACM International Joint Conference on Pervasive and Ubiquitous Computing. ACM, 2016, pp. 1–12.

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