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- Extended Context Patterns – A Visual Language for Context-Aware Applications
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- 10.10.2016



■ Context

■ Focus

■ Graphs & Patterns

■ Extended Patterns

■ Conclusion

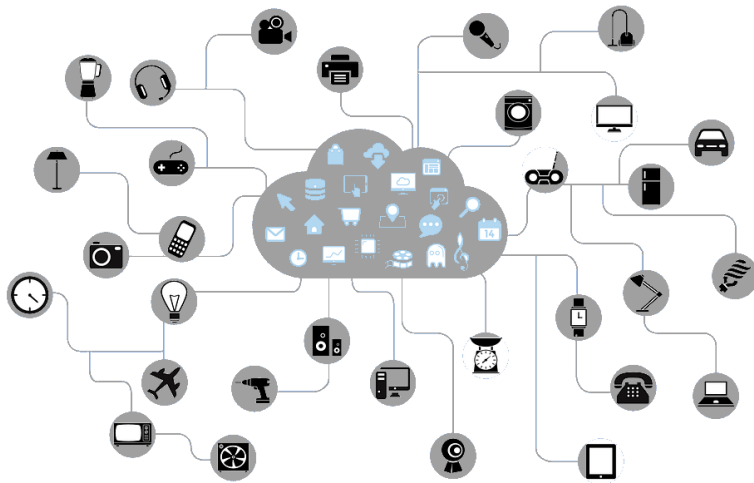
■ Future Work

# Extended Context Patterns – A Visual Language for Context-Aware Applications

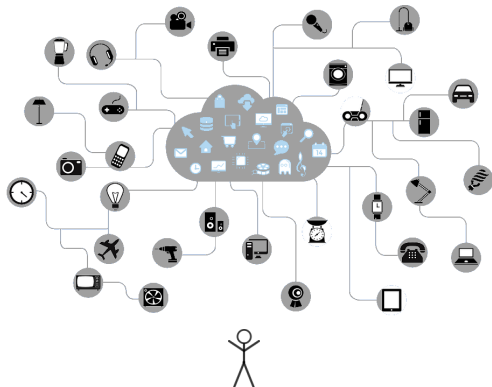
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overview

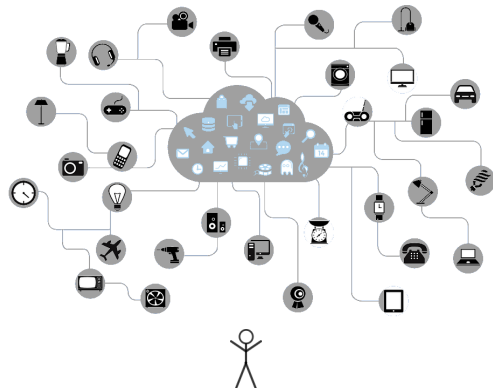




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· part of the AmlciTy initiative and the CAMI project.

[aimas.cs.pub.ro/amicity](http://aimas.cs.pub.ro/amicity)

[camiproject.eu](http://camiproject.eu)



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· take inspiration from Conceptual Graphs, Semantic Maps and RDF.

[Sowa, 2006, Sowa, 2008, Lassila and Swick, 1998]



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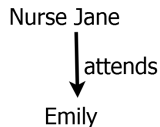
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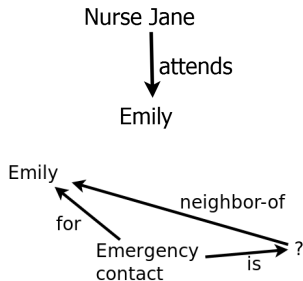
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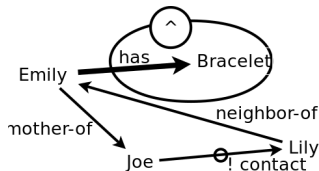
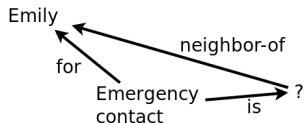
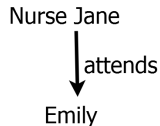
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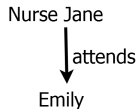
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# Context Graphs and Patterns

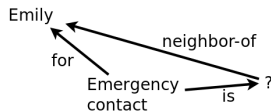
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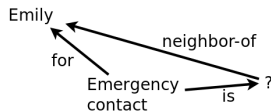
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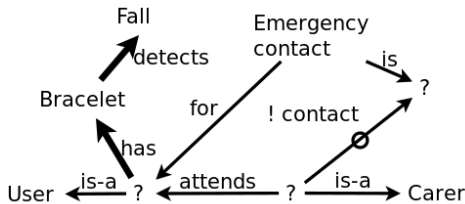
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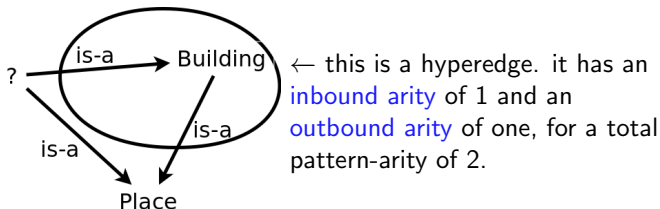


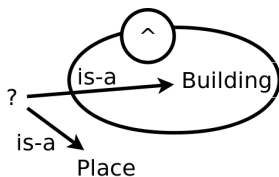
- ▶ patterns contain **generic nodes**, that match any concept.

- ▶ to support describing conditions for and effects of pattern detection → edges have properties such as **characteristic** and **actionability**.

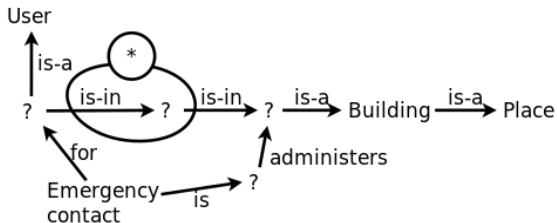


- ▶ in order to increase the power of context patterns, we introduce further structuring elements, in the shape of several types of **hyperedges**.

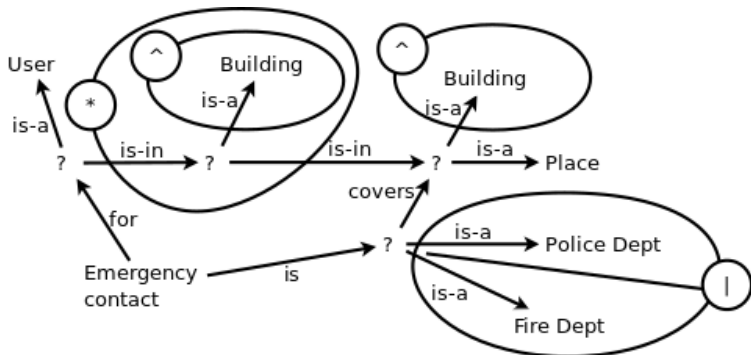




“The place is not a building.”



“There may be various spaces contained in each other, of which the topmost is a building. In this case, the emergency contact is the administrator of the building.”



“If the place where the user is located is not a building, then contact the Police or Fire Department which covers the place.”

- ▶ We have developed a formalism that relies on graph theory.
- ▶ We have introduced three types of hyperedges which can extend the power of expression of graph patterns.
- ▶ Matching of the three types of hyperedges can be integrated into the existing algorithm for context pattern matching. [Olaru and Florea, 2015]

- ▶ Test the expressiveness of the introduced formalism in more Aml and AAL scenarios.
- ▶ Test the performance of the matching algorithm on real-life scenarios.
- ▶ Create a visual interface in which the user can easily create extended context patterns.

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# Thank You!

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Any Questions?

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