Prototyping for social simulation

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Introduction

- Maarten Jensen, doctorand at datavetenskap
- Supervisor: Frank Dignum
- Co-supervisor: Helena Lindgren
- Socially aware AI group
  - Christian, René, Cezara, Eren

- Socially aware agents project
  - Implementation of socially aware agents
- Prototyping to assist implementation
Why prototyping?

- Social simulation requires defining social concepts

- Example: context
- Easy for a person difficult for a machine
- What is the current context?

- Vague requirements → prototyping
Emergence of prototyping

- Software development
- Life cycle method
  - Waterfall method
  - No turning back
- Need more flexibility
- Prototyping (agile)

What is prototyping?

● "An information systems prototype is an early version of a system that exhibits the essential features of the later operational system" [1]

● Prototyping development →

● However there is more


Categorizations of prototyping

● Exploratory prototyping
  ○ Clarifying requirements and desirable features
  ○ Quick, throwaway prototyping

● Experimental prototyping
  ○ Interaction with user, stakeholder
  ○ Is technique useful?

● Evolutionary prototyping
  ○ Iterative development
  ○ Prototype evolves into product

Horizontal vs vertical prototyping

- Evolutionary prototyping

An issue in social simulation

- Social simulation model behavior of people
- Many (social) theories
  - Multiple interpretations [1]
  - Multiple implementations [1]
- Modelers often use only one

- A platform can help

Platform for social simulation

- Platform easy use of social rules
- First steps with Unity (Cezara Pastrav)
  - Legal/social norms
  - Rationality goal oriented
  - Basic context
- Now add habits, social practices, etc.
- How to do the next steps?
How can we use prototyping?

- Not evolving the product
- Rather finding requirements
Our current prototype

- Programming language choice
  - Java, Repast
  - Switch programming language?

Architecture prototype 1

Architecture prototype 2
Conclusion

- Helps find requirements and issues
- Vertical prototyping gives focus
- Interesting for other researchers
The end

- Thank you!

- Questions?