

Modeling optimal timing for reinforcing decisions for elderly people

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Objectives

Designing an **mathematic model** to compute an **optimal time** when to prompt elders to keep their decision of being more social active

Situation studied

An elder decides he wants to meet with someone from his social network at a certain time point in future.

We want to have a system able to answer the question:

What is the optimal time when should the system prompt him about his meeting, so that the probability to reach it increases.

Model

The model uses 5 variables depending on the elder's behavior and his social network :

- **Perceived utility discount rate**
- **Attachment towards the goal**
- **Relative time of the meeting**
- **Perceived utility of meeting a person**
- **Personal Threshold**

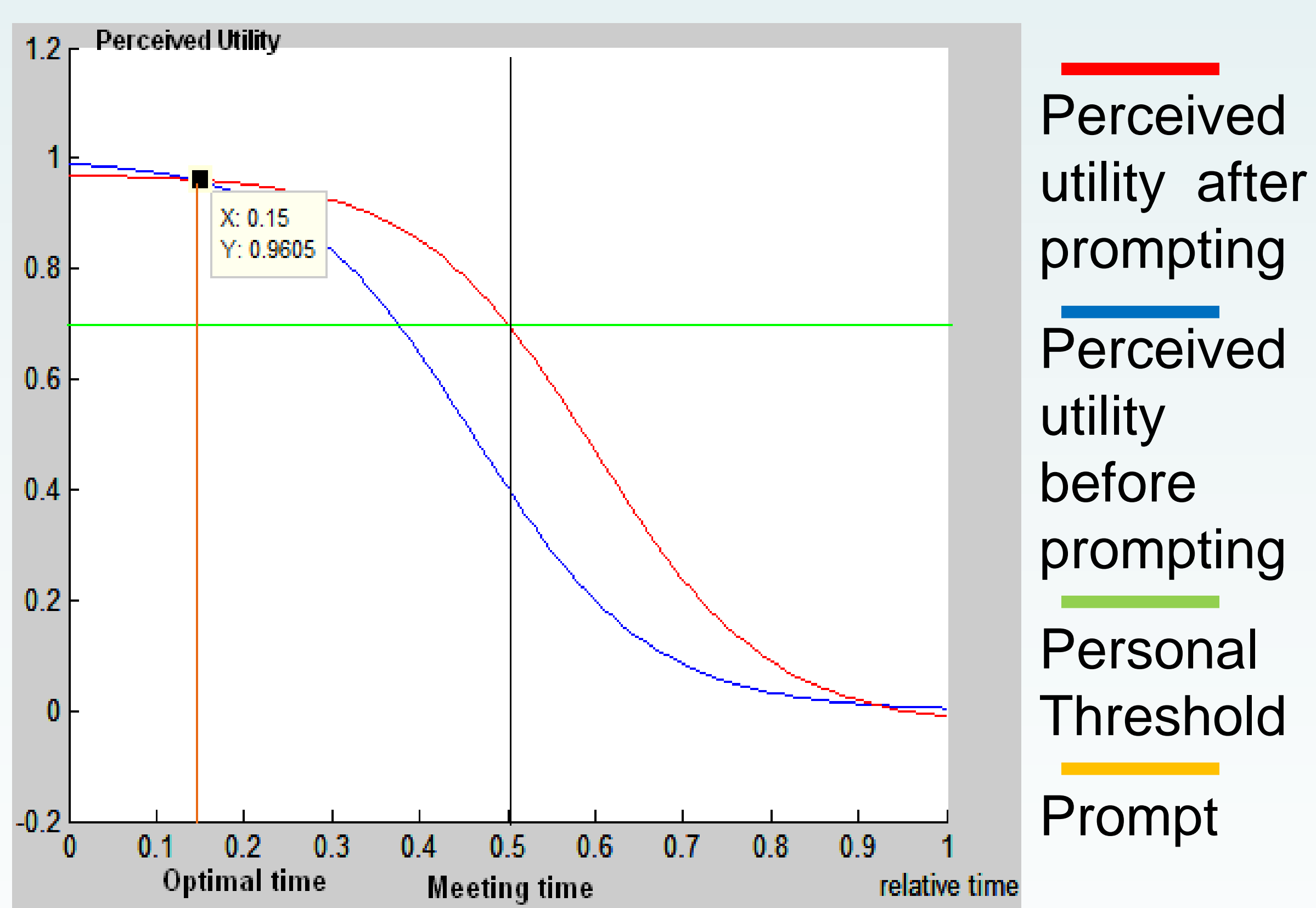


Fig1. Expected perceived utility variance, with one prompting at optimal time, and without.

Testing the Model

1 We are currently developing a **simulation** in the in a multi-agent modeling environment (*Netlogo*) that simulates a social network of an elder.(Fig2).

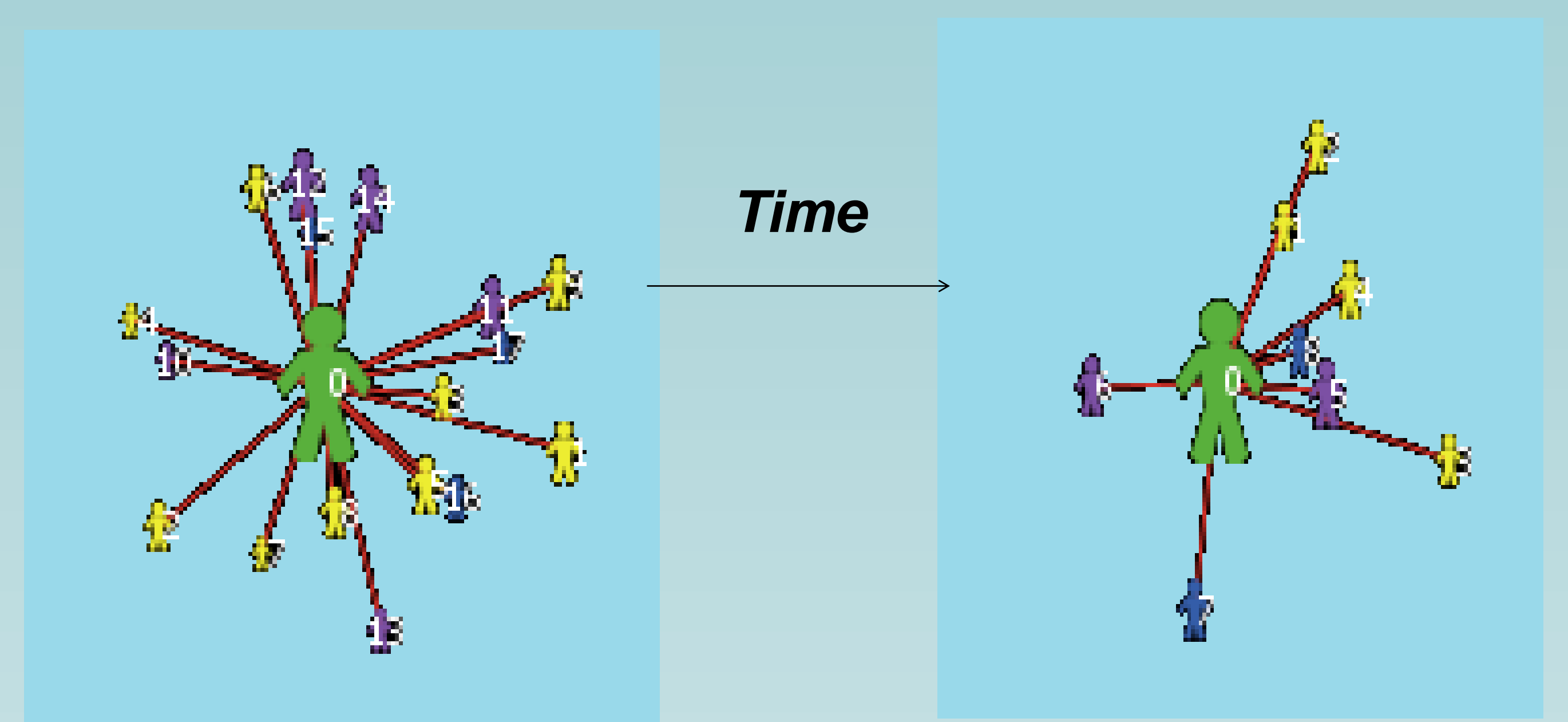


Figure 2. Evolution of social network of elders

The goal of the simulation is to compare the evolution of one's social network with regular prompting and with our prompting model deployed.

2. We have developed a **lesson** in the project **Virtual Coach Reaches Out To Me** that will implement the model we developed. This project is an ambient assisted living solution to prevent loneliness.

For more information please access:



or go to the website <http://www.v2me.org/>

Once data will be collected, we will be able to validate our model on it.

Future work and Conclusions

From what we are aware, this is the first attempt of automatic prompting based on the utility of meeting someone from a social network.

In our future work we aim to examine to what extend our model can be generalized to more situations.