



NVC and Emotions in Virtual Worlds

from user to avatar, from avatar to semi-autonomous agent

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In virtual worlds –potential projection of virtual reality (VR) – virtual humans (VH) strongly lack of non-verbal communication (NVC). This speech gives potential answers to this non-trivial issue.

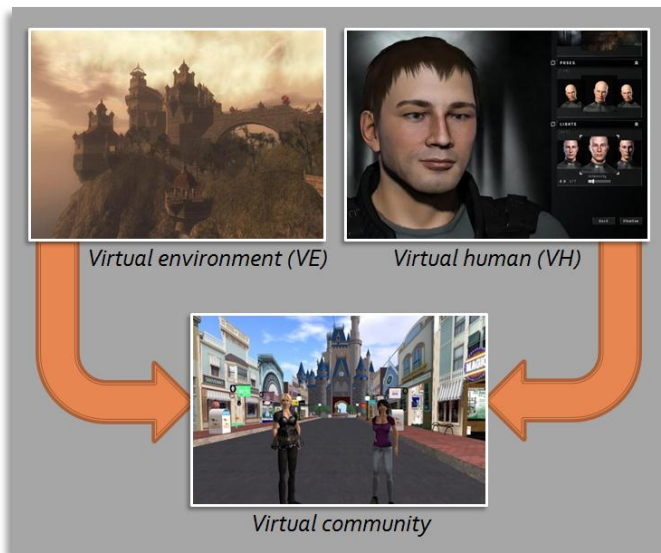


Figure 1: virtual worlds implies a notion of virtual community

In that purpose I will first present VR fundamentals such as *virtual community* (e.g. 3D social forum, see Figure 1), *VH representations*, i.e. *autonomous agents* and *avatars*. Then, I will show that to make these virtual worlds consistent, the role of NVC is essential. Indeed, users are willing to become more than simple players but real social actors. From that basis, due to the complexity of NVC, I will demonstrate:

- Why graphical user interfaces become impossible to design;
- Why it implies that avatars cannot fully be controlled by their user;
- What issue possible software architectures have to solve, especially the notion of *event triggered architecture*.

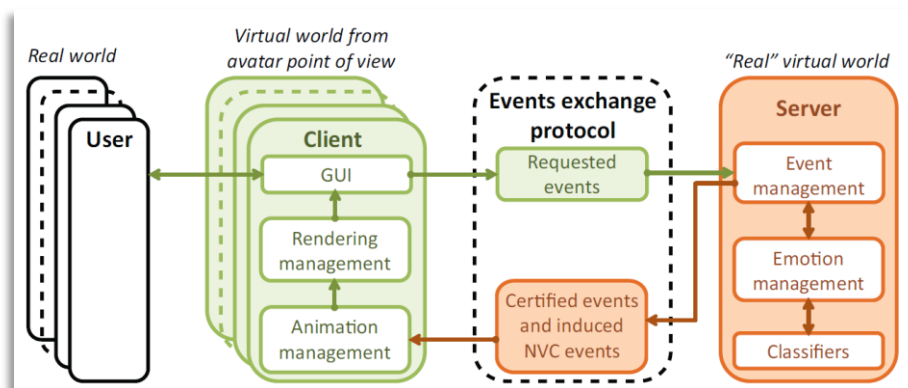


Figure 2: event triggered architecture

After a short break, I will introduce the relative notion of emotion in VE and a model developed within the [CYBEREMOTIONS European project](#). This event based structure allows flows of virtual emotion to be simulated; therefore I will also details:

- How can be defined and parameterized emotions;
- How to simulate flows of personal and interpersonal emotions;

I will then conclude the speech by demonstrating resulting change of emotions on virtual humans.



Figure 3: a consistent virtual world implies automatic non-verbal communication