Concept / planning:

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Ver: 1.1

Project description:
(For evaluation purposes)

1. Name: "HeisenBurger"

1.1 Name origin:
A) Noted physicist, *Werner Karl Heisenberg (5.12.1901-1.2.1976)* concluded, that the very action of observing affects the behavior of the elemental particles, that our very reality consists of. In the field of physics, this is known as the "Observer effect".
B) In the field of programming, "Heisenbug" is a bug in the software, that disappears or alters its behavior, when detected.

2. Goals:

The artistic goal of **HeisenBurger** is to arrange visual symbolic elements, to affect (trough senses) the emotions and intellect of the perceiver. The artistic impression is born both in the process of its makers, and the interpretation of the perceiver. The viewer would become aware of the way he/she looks at a visual content. This is what **HeisenBurger** aims to make evident, through the utilization of state-of-the-art technology.

3. Taglines:

HeisenBurger is a collaborative project of professionals in Science and Art. Eye tracking technology, programming and Visual Arts conjoining to an "eye-catching" Media Art piece. High-end real-time 3D graphics Art with a gaze-tracking user interface. A Visual Media Art installation, where the mere act of observing affects the perceived content.

4. Project outline:

4.1 Concept of Function:
The gaze is tracked, and it "draws" a trace of "solidity" in the smoky, foggy environment. The spot expands, if the gaze stays still. Looking off-center will move the camera in the environment. The environment of digital artwork will never end in the arbitrary (X,Y) directions (accomplished by tiling).

4.2 Independent Function:
By default, the screen is displaying the undefined, colorful smoky environment.

4.3 Interactive Function:
When a viewer is detected, the system starts to run the averaged Gaze Plot. The unobtrusive (or hidden) calibration phase is initialized. Once completed, the system will make a smooth transition to the interactive "Gaze Path" of the perceiver. This is the surprise element, when the viewer notices, that the gazing affects the image. The perceiving (fixation of the eye) launches audiovisual events in the virtual phantasmagoric environment. The "solidified" area the viewer makes, will contract eventually. As in reality, one affects it, but can perceive only a part of it at a time.

The viewers Gaze Plot is recorded, and thus will contribute to the unobtrusive calibration sequence, as it affects the averaged Gaze Plot.

Data mining can be utilized to study, how humans react to the unconventional artistic visuals. Do they fixate to the elements they are familiar with (€ symbols and cues), and how do they follow the contextual visual associations?

4.4 Concepts to Grasp:
A) The action of observing affects the environment.
B) One can perceive only a part of the environment at a time.
C) The way we see the artistic content, affects the way others will see it after us

5. Team:

5.1 2D/3D Art, Audio:
Albert Laine, Kristina Laine (Art Direction, planning)

5.2 Programming:
Oleg Špakov (Gaze Tracking)
Peter Hillerström (Graphics)
Lari Natri (Data Mining)

6. Technologies used:

6.1 Gaze *(eye)* Tracking, with unobtrusive (hidden) calibration feature.
6.2 Real-time 2D/3D Computer Animation.
6.3 GPU-Processed (Real-time)inverse smoking/blurring effect (Blender game engine), and 3D shader networks.
6.4 Data mining