

Pervasive Computing for Sustaining Cultural Heritage

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Abstract

As a computer scientist, I had been working for decades on challenging and highly useful domains of research and applications as computer-aided manufacturing, health-care or remote communication via avatars. The tsunami-like development of communication technologies – like smart phones, tiny sensors of all kinds, the 7/24 online existence – in the recent years posed new challenges:

- How can we harvest the potentials of the constant development of digital technologies for the well-being of the society?
- Who are the “we”, the ones to invent new applications, and design and present them in a way attractive for the “potential user”, especially, for the new generations? It is clear that these tasks are beyond the competences of programmers and engineers.

At the Creative Technology Lab of MOME we work on experimental projects in interdisciplinary teams of visual artists, programmes, project managers, experts from humanities, pedagogy, psychology, and often in strong cooperation with the envisioned user. Our aim is to invent novel applications which are appealing, inviting, playful – and at the same time useful: make us aware of environmental or social problems, cultural heritage, help/motivate learning, strengthen communities and induce face-to-face dialogues too.

In my talk I will give examples of two major, sometimes overlapping, domains have been focussing on.

Many wonder what will be available “beyond print” in a few years: will books (and reading) disappear? Or, rather, the tablets and other devices open new ways of experiencing literature or learning? How to forge meaningful and useful genres of – moving, sensitive for interaction – typo, text, image and sound? Some examples I will demonstrate, and discuss the related technologies, and lessons learnt:

- Aunt Pepper [1]: a traditional book with Augmented Reality features;
- Reactive Score [2]: turn the pages of a manuscript by the composer Ferenc Liszt,
- With our two interactive books (Little Rooster [3], and a brand new one yet to be announced) we experimented with dividing narrative elements, designing the interactions. I can

share interesting findings on the technical as well as cognitive level of usage.

Another, similarly alarming or just equally inspiring domain is the world of museums, and in more general, the cultural heritage. The traditional means and expected behavioural patterns seem not to work. But we can invent ways of extending the museum visit experience, even beyond the walls. A couple of our projects with this aim:

- Rooftops at Dawn [4]: a complete novel is cut into pieces according to locations in Budapest. real and virtual, past and present, text, photo and film from together a unique “reading” experience.
- Among the museum projects, our most beloved one (by us, but also by the visitors) are the 11 interactive installations at the exhibition Words stirred [5]. Visitors can blow, patch, tap or sense under the fingers the poems.

BIO

Zsófia Ruttkay is professor at the Moholy-Nagy University of Art and Design, where she founded and runs the Creative Technology Lab. After obtaining her PhD and spending 25 years of academic research in AI, computer graphics and human-computer interaction, resulting over 120 publications, since 2007 she has been working on the intersection of art, science and technology. She is involved in international and national projects. She also runs special interdisciplinary courses to bridge the gap between the artistic approach of the creative and visually talented designer students of MOME and programmers and technology students at other technical universities. She, together with her lab and students, often get involved in urban and socially relevant projects, several of which got international and national awards.

REFERENCES

- [1] Aunt Pepper, <http://create.mome.hu/index.php/en/projects/interactive-book/223-aunt-pepper>
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- [3] Little Rooster, <http://techlab.mome.hu/index.php/en/projects/interactive-book/307-a-kiskakas-gyemant-felkrajcarja-a-mome-techlab-kiserleti-tablet-meseje>
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