Bauhaus-Universität Weimar

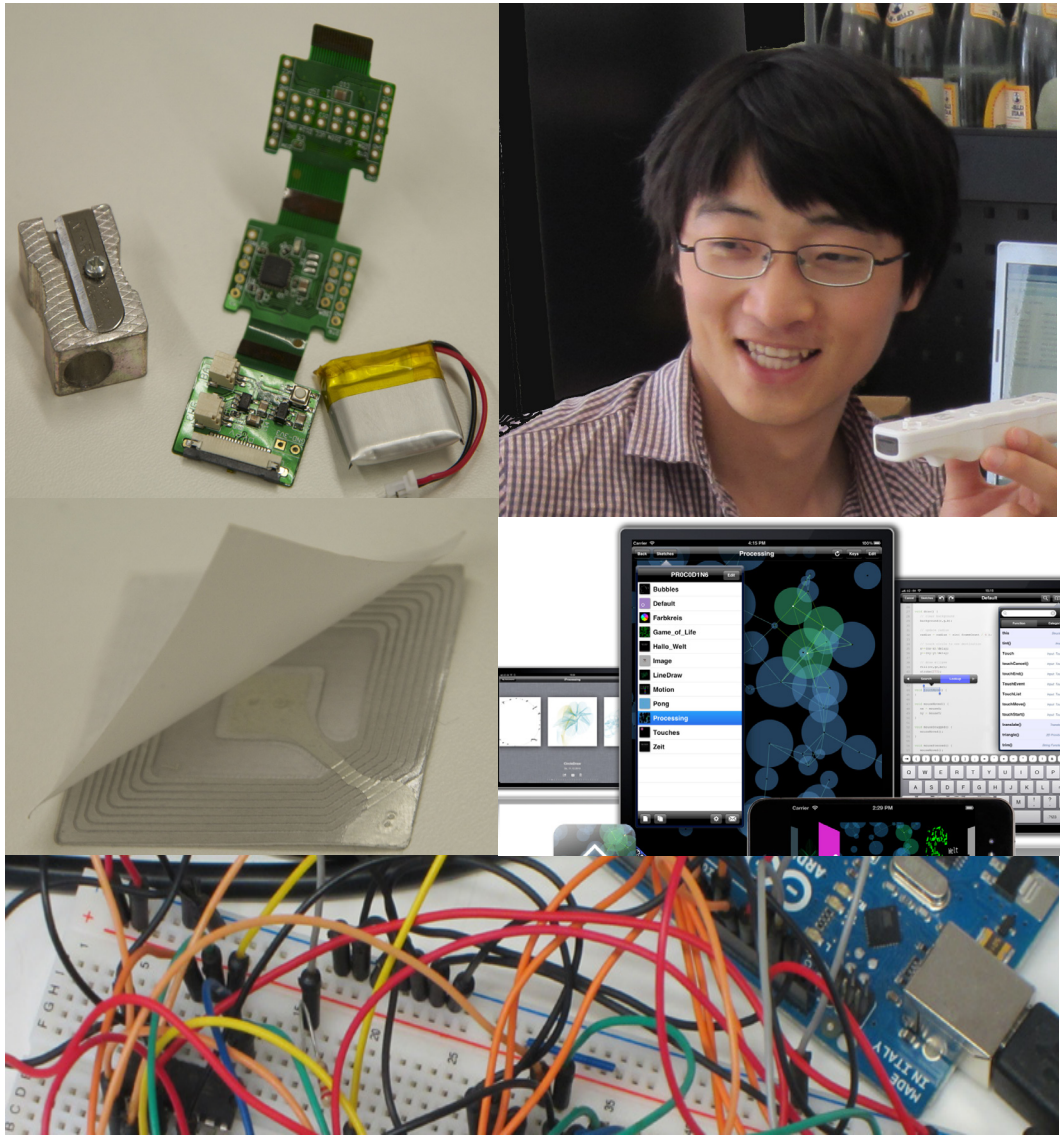
Mobile Applications & Tangible Interaction

The Interface Design Group has more than 15 years of experience in the design of digital media, mobile and location based applications and tangible interfaces.

Our strength is to develop working prototypes in close cooperation with engineers and scientists in interdisciplinary teams.

We develop ideas and concepts based on user centered design principles in an integrated, iterative design workflow. Creative methods inspired by art & design strategies and workflows are used to develop Interface and Interaction Designs.

The final realization of working prototypes requires not only a solid understanding but also technical skills from the designers in our group. Electronic and physical computing as well as programming skills are treated as equally important as conceptual and design skills.



Bauhaus-Universität Weimar

Digital Osmantinum

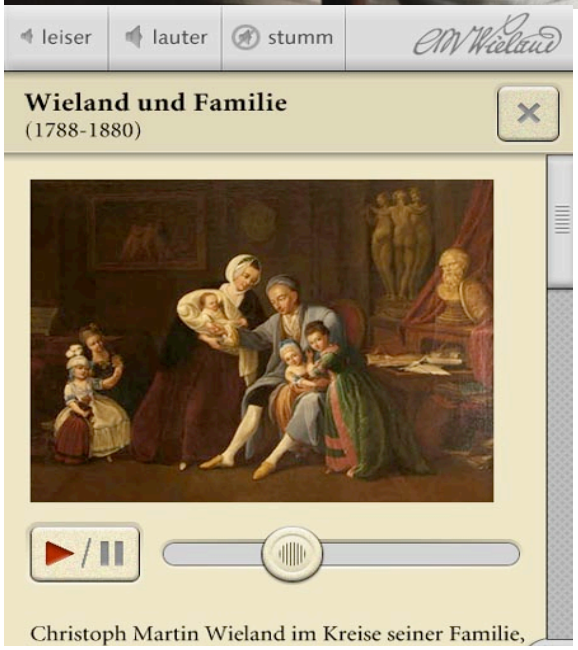
EU Research Project 2003/04,
U. Straub, T. Weiss, L. Wienecke,
J. Geelhaar

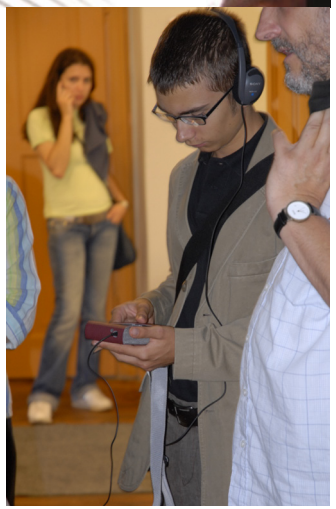
Digital Osmantinum was a PDA based museum guide for a small literature museum. Technically the system was based on WLAN positioning and RFID based object recognition.

Visitors can walk through the museum and will be offered visual and auditory content depending on their position inside the museum. RFID Tags were used to specify the exact position and to allow access to object specific content.

It was planned to allow access to digital facsimiles of historic books,that were not allowed to be touched. Unfortunately this function is not yet implemented because the books were not digitized until now.

In 2012 the system was replaced by us by an IPad based guide.





DIGITAL OSMANTINUM

Funded by EU Interreg IIIB
project HERMES

Mobile Devices

ZooGo

Diploma Thesis 2006,
Tina Barthelmes

ZooGo is a PDA based guide for a Zoo. The location is acquired by a GPS receiver.

The application allows visitors to experience the Zoo in different ways during multiple visits. It also offers „in time“ information - like telling the visitors the feeding times of the animals. It allows changing the route according to this information.

The major contribution was to develop the concept for a digital guide for multiple visits of a Zoo, the interface design and the implementation of the system on a state of the art PDA with GPS receiver.

Bauhaus-Universität Weimar

Digital Bubble

Master Thesis 2009,
Romy Kniewel

Digital Bubble is an app for Android phones realized prototypically for the Hannover fair. Our contribution was the interaction concept and the interface design of this application.

It allows users to not only navigate and orientate themselves in a fair, but also to find persons, places and objects according to personal preferences.
It can also make yourself visible for other people using the same application.

The central part of the application is the „Radar“ screen which shows you were to find persons, places and objects that you were looking for.

Digital Bubble was realized in cooperation with Fraunhofer IAO.

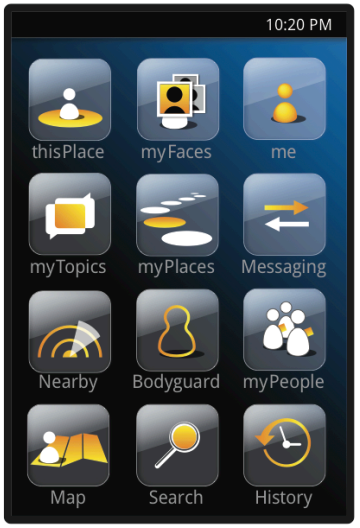


Abb. 19: Hauptmenü

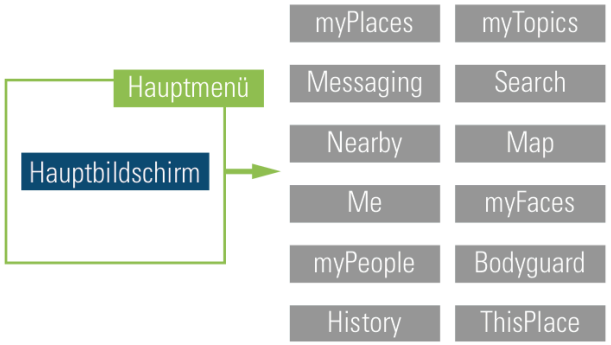


Abb. 20: Flowchart: Die zwölf Funktionsbereiche sind via Hauptmenü erreichbar

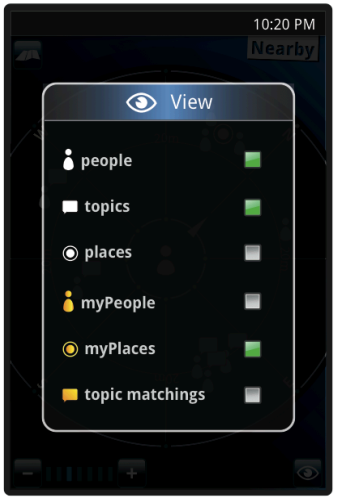


Abb. 50: Anzeigbare Elemente des Nearby

Abb. 51: Tooltip einer unbekannten Person

Abb. 52: Tooltip eines myPlace

Unter der Schirmherrschaft des Bundesministerium für Wirtschaft und Technologie

1st prize „Zukunftspreis - Kommunikation“

Bauhaus-Universität
Weimar

Weimarpedia

BMBF Research Project 2010-12,
J. Geelhaar, F. Metzger, A. Wolter, F. Matuse, J. Weber

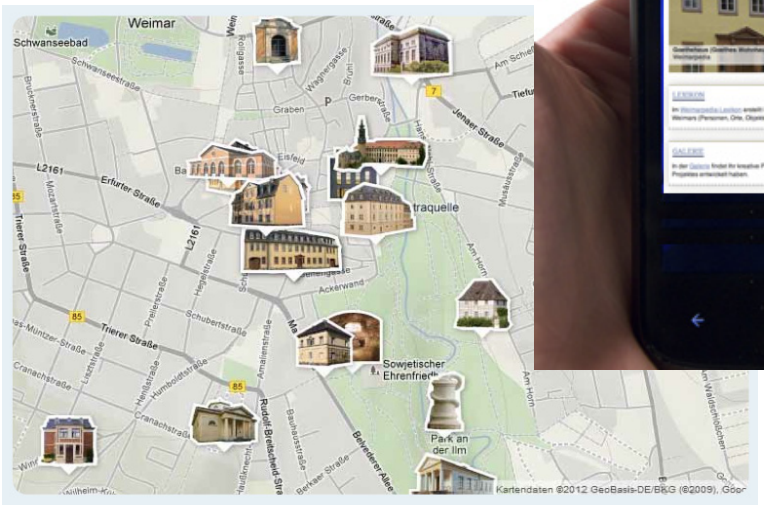
Weimarpedia is a complex software for experiencing the vast amount of information present in the city of Weimar with mobile „Smartphones“ and participating in this framework by producing and sharing own content.

The main target group currently are some of the 2000-3000 school classes visting Weimar every year. They typically stay for three days.

Weimarpedia allows them to acces the content which was produced by past school classes via mobile smartphones and a web application that reads the smartphones GPS receiver and delivers conten according to the actual position.

Furthermore the framework allows to upload and share own content.

Weimarpedia was realized in cooperation with Klassikstiftung Weimar.



Funded by :
Bundesministerium für Bildung und Forschung

Bauhaus-Universität
Weimar

WiiSpray

Diplома Thesis, Martin Lihs 2009

WiiSpray is a digital spraycan for graffity artists and other creative persons.

It is a tool for the creative visual expression on a back-projected image of a wall, building, etc.
It borrows shape, functions and haptics from the analog pendant but offers a new tangible interface beyond the usual input devices on a computer.

It is self-explanatory and does not require a manual.

The additional stencil allows to spray self created patterns.

"WiiSpray" is not just a hardware interface but also a software. The software offers a wide range of colors and supports different spraying caps.
It allows to use own backgrounds (photos, graphics, etc.) and to share all this on an internet platform.

More information :
http://www.wiispray.com

communication design award

2009

Bauhaus-Universität
Weimar

Digital Representation of Cultural Heritage / Understanding (New) Media to develop better applications for archaeology research and museums

Bachelor Thesis, Marcel Karnapke 2012

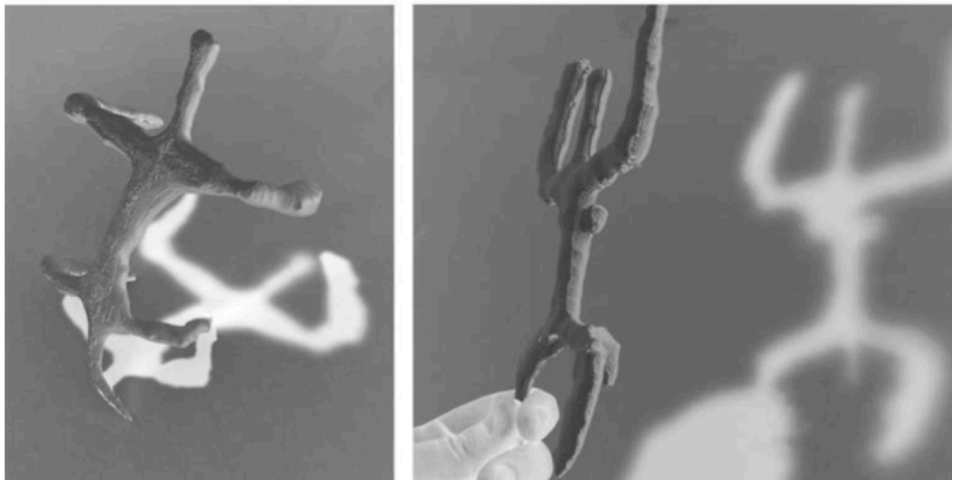
„The development of applications for research and educational facilities cannot be undertaken without a critical consideration of the scientific fields involved. The aim of this thesis is to combine classical archaeology and modern optical scanning and imagery technology thus enabling a broad new range of possibilities regarding processing, interpretation as well as expression of the newly achieved data."

3D scans were used in an AR application and finally printed as 3D Objects.
The interpretation was then realized by the 2D shadow of the physical object.

This thesis was realized in cooperation with the Chair of Virtual Reality, Prof. B. Fröhlich.

Best work in the annual Bauhaus-University exhibition 2012

Figure 2: *Without directional flash compared to directional flash photography (right)*



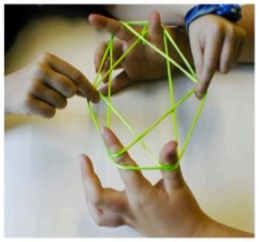
Tangible Interfaces

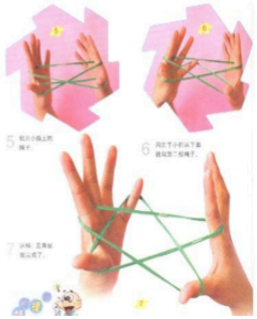
Melodic Rope

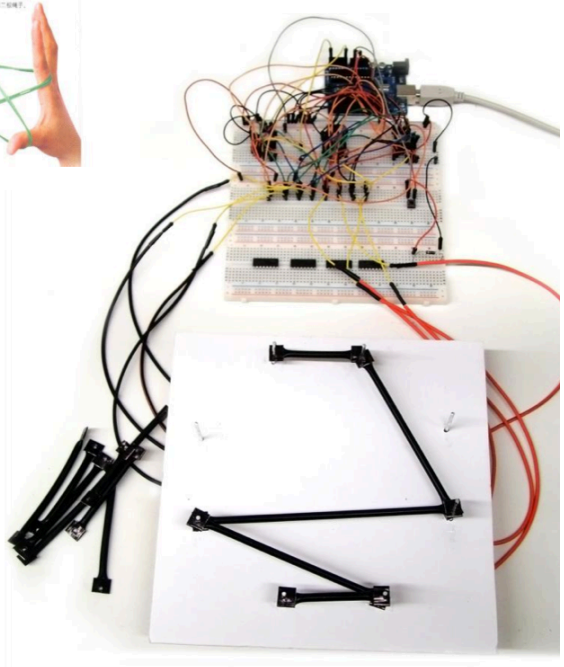
Master Project, Jie Wang & Yunshui Jin, 2012

Melodic Rope is an experimental interface for producing sounds and music with a conductive rubber.

By touching or stretching the rubber band different sounds can be produced and even small compositions can be realized.







Tangible Interfaces

KinectA

Master Thesis, Michaela Honauer, 2012

KinectA is an open source tracking framework based on the Microsoft Kinect Hardware. The framework is completely programmed in C++.

It allows a couple of functionalities currently not offered by other products.

The target group are artists, designers and other creative persons without programming skills, who want to realize projects were they need to track peaple in space and want to trigger multimedia events by these movements in space.

STIFT prize for applied reseacrh 2012

STIFT
Stiftung für Technologie, Innovation und Forschung Thüringen

Interface Design Group
Prof. Dr. Jens Geelhaar

Academic Education:

1983-1986	Karlsruhe Institute of Technology (Technical University), Germany, Faculty of Chemistry / cand.chem.
1986-1991	Ruprecht-Karls University Heidelberg, Germany Faculty of Chemistry / Dipl.chem. / Thesis in Inorganic Chemistry
1991-1995	Ruprecht-Karls University Heidelberg, Germany Medical Faculty / Dr. sc. hum. (Human Sciences) / Ph.D. Thesis in Environmental Photochemistry (1995)
1991-1996	HBK Saar (University of Fine Arts Saar), Germany Fine Art / Diplom in New Artistic Media / Thesis: Tangible Internet Art Installation (1996)
1998-1999	Akademie der Künste Berlin, Germany Stipend Fine Art

Professional Carreer:

Since 1999	Professor for Interface Design, Member of the Departments of Media and Architecture, Bauhaus-University Weimar, Germany
2007-2012	Guest Professor, Tongji-University, Shanghai, P.R. China

Prof. Geelhaar coordinated several research projects (BMBF, EU). He is Vice Speaker of the Tangible Media and of the Knowledge Media Design Group of the GI (German Computer Science Associaton).
He was Dean of Studies and Dean of the Media Department for many years and is the coordinator of two international Double degree Master programs.
He founded several media companies and supported Start-Up companies as a Mentor. His artworks were exhibited and won prices nationally and internationally.

Interface Design Group
Prof. Dr. Jens Geelhaar

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+49-3643-583763

Publications:

(**2012**) Geelhaar: Zur Gestaltung be-greifbarer Mensch-Maschine-Schnittstellen in: Bernard Robben, Heidi Schelhowe (Hrsg.) Be-greifbare Interaktionen - Der allgegenwärtige Computer: Touchscreens, Wearables, Tangibles und Ubiquitous Computing

(**2008**) Göbel, S., Geelhaar, J.: Digitale Museumsanwendungen, i-com Zeitschrift für interaktive und kooperative Medien 2/2008, Oldenbourg München,pp. 26-31 (www.atypon-link.com/OLD/doi/pdf/10.1524/icom.2008.0019)

(**2008**) Willis, K., Geelhaar, J.: Information Places: Interfaces Between Physical and Digital Space, in Foth, M. (Hrsg.). Urban Informatics. ICS Global.

(**2007**) Giles, T., Marienek, M., Willis, K.S., Geelhaar, J.: Hide and SEEK: sharing cultural knowledge. ACM Multimedia 2007: 481-484

(**2006**) Geelhaar, J.: Interaktion mit verteilten digitalen Informationsräumen, in: Eibl, M., Reiterer, H., Stephan, P.F., Thissen, F. (Hrsg.): Knowledge Media Design - Theorie, Methodik, Praxis, 2. Aufl., Oldenbourg München, pp. 225-236

(**2005**) Wieneke, L., Weiß, T., Geelhaar, J.: Digitales Osmantinum - Digital Media Integration for a Literature Museum, ICHIM05, (www.archimuse.com/publishing/ichim05/wieneke_paper.pdf)

(**2004**) Geelhaar, J. et al.: An Example for Location Sensitive Media Integration: Re-discovering the Place Itself as a Medium by Adding Technology, in: Göbel, S. et al. (Hrsg.): Technologies for Interactive Digital Storytelling and Entertainment, TIDSE 2004, LNCS 3105, Springer Berlin/Heidelberg, pp. 270-276