Computer Graphics and Vision

TUG
Faculty of Informatics
Graz University of Technology

Program - Open Lab Night´06

9th October 2006

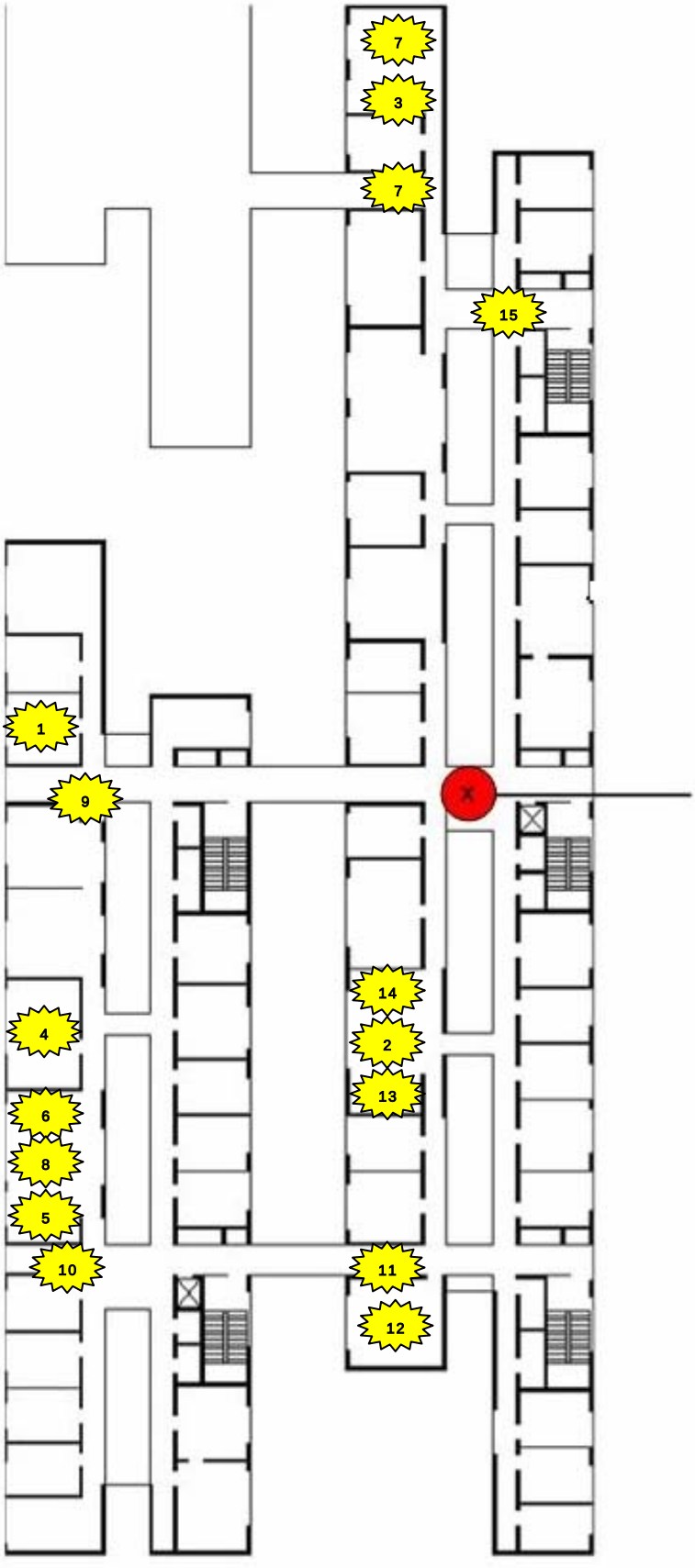
16:00 – 17:00	**Ort: HS i12** **- Vorlesungsangebot** **- Themen für Bakk.-Arbeiten,** **- Projekte u. Diplomarbeiten**		
19:00 – 23:00	**Ort: Inffeldgasse 16/2** **- Live-Demos**		
19:00 – 20:00 21:00 – 23:00	**GenView: Gendaten-Visualisierung**	1	room F.3.10 Michael Kalkusch
19:30 – 22:30	**Total Variation on GPU**	2	room E.3.04 Markus Grabner Thomas Pock
19:00 – 23:00	**Studierstube Haptic Workstation**	3	room E.3.14 Antonio Rella Markus Grabner
19:00 – 20:00 21:00 – 23:00	**Vidente - Jakominiplatz Augmentation**		room F.3.07 Erick Mendez Daniel Wagner
19:00 – 20:00 21:00 – 22:00	**VR-Quake**	5	room F.3.06 Denis Kalkofen Judith Mühl
20:00 – 21:00 22:00 – 23:00	**Façade Painting**	6	room F.3.06 Markus Sareika
19:00 – 23:00	**Liverplanner**	7	room E.3.14 Alex Bornik Reinhard Beichel Christian Bauer
19:00 – 20:30 21:30 – 23:00	**Handheld AR Tech Demo**	8	room F.3.06 Albert Walzer
19:00 – 21:00 22:00 – 23:00	**Online 3D-Reconstruction**	9	corridor Bernhard Reitinger Christopher Zach
19:00 – 21:00 22:00 – 23:00	**Ubisense Sensorfusion**	10	corridor Gerhard Schall
19:00 – 21:00 22:00 – 23:00	**Mobile Robot**	11	corridor Joachim Pehserl Petra Korica-Pehserl
19:00 – 20:00 21:00 – 23:00	**Robot Vision Lab**	12	room E.3.01 Matthias Rüther
19:00 – 21:00 22:00 – 23:00	**Conservative Learning**	13	room E.3.04 Peter Roth
19:00 – 20:00 21:00 – 23:00	**On-line Boosting und Anwendungen**	14	room E.3.04 H. Grabner
19:00 – 21:00 22:00 – 23:00	**Visuelle Verkehrsüberwachung**	15	corridor Amir Safari Jakob Santner

List of all demos

Demo	Place	Description	Contact
GenView: Gendaten-Visualisierung	1 room F.3.10	Visualization of Micro Array data using multiple displays.	M. Kalkusch
Total Variation on GPU	2 room E.3.04	Here, we give a live demo of Variational denoising and segmentation algorithms computed on modern Graphics Hardware.	M. Grabner T. Pock
Studierstube Haptic Workstation	3 room E.3.14	Interaction with three-dimensional virtual objects requires sophisticated input devices to maintain the correspondence between the input device and the virtual object. Tracking systems (e.g., optical, magnetic, ...) provide location and orientation of real objects and can thus be used to align them with their virtual counterparts. However, this is still not sufficient to conveniently perform operations on an object's surface since it is very hard to position the input device exactly at the surface. Force feedback devices (or haptic devices) solve this problem by exerting forces that let the user feel a virtual object. It is therefore easy and intuitive to touch its surface and perform operations on it (such as deformation). We present several examples of static and dynamic objects that are both visible and touchable.	A. Rella M. Grabner
Vidente - Jakominiplatz Augmentation	4 room F.3.07	VIDENTE is a research project with the ultimate goal to completely change the way utility network information is perceived in the field. VIDENTE merges video-captured real world scenes with computer generated 3D graphics of subsurface utility networks in real time. Following all your movements, your mobile PC shows you the underground cables, pipes, tubes or ducts on top - or rather underneath - the image of your surroundings. VIDENTE currently uses a mobile client device such as a Ultra Mobile PC or Smartphones integrated with units for video capture and tracking. The integration of GIS data and the constantly updated real world view is achieved by applying augmented reality (AR) techniques.	E. Mendez D. Wagner
VR-Quake	5 room F.3.06	This demo shows a stereo projection system consisting of two, low cost mono projectors. the shuttering is controlled by an external puls generator which ensures for synchronization of shutter glasses and the projectors. to demonstrate the immersive effect, caused by stereo projections, we have modified the open source quake 3 engine in a way that it outputs stereo renderings from a three dimensional viewpoint which is controlled by an electromagnetic tracker attached to the shutter glasses.	D. Kalkofen J. Mühl
Façade Painting	6 room F.3.06	The Façade Painting Demo uses a controllable (pan-tilt-zoom) camera looking around to acquire an image of a real Façade, which is then presented on a video screen for augmentation. Interactive modifications of the perceived scene through direct painting on the façade of buildings will be possible. This setup allows interacting collaboratively based on mixed reality techniques.	M. Sareika

Liverplanner	7 room E.3.14	The "Liver Planner" project deals with the surgical planning of liver tumor resections. It is a very interdisciplinary project involving computer vision, computer graphics, radiology, and surgery. The demo will give you the opportunity to learn more about the different technologies used in the system like advanced segmentation or interactive Virtual Reality techniques. It will also be possible to plan surgical intervention on your own using the state of the art Virtual Reality hardware installed in Visualization Center at ICG.	A. Bornik R. Beichel C. Bauer
Handheld AR Tech Demo	8 room F.3.06	A technology demo showcasing the application of Augmented Reality for gaming on a regular, commercial handheld gaming device.	A. Walzer
Online 3D-Reconstruction	9 corridor	This demo presents a first prototype where mixed reality meets computer vision. By using an ultra-mobile PC, reconstruction is applied on-the-fly for getting 3D models.	B. Reitinger Ch. Zach
Ubisense Sensorfusion	10 corridor	A basic sensor fusion experiment is shown on a mobile AR client, which is equipped with different sensors. The sensors consist of a USB camera for an optical tracking system; an “UbiTag” that provides position estimates only; and an inertial tracker providing orientation estimates only. By aggregation of sensor data it can be achieved that the position and orientation of a mobile user can be determined at any time.	G. Schall
Mobile Robot	11 corridor	We present the mobile robot FLEA which was designed to be used for service tasks in indoor environments. Our research has the focus on global visual localization, artificial intelligence, object detection, navigation and visual servoing. In our demo we will show some of the features of FLEA like navigation, person detection and localization.	J. Pehserl P. Korica-Pehserl
Robot Vision Lab	12 room E.3.01	Computer Vision meets robotics. We present two projects where robotic actuators and vision systems are joined together to solve measurement tasks: • Measuring shape and elasticity of cartilage specimens. • Counting drug boxes in an automated commissioning system.	M. Rüther
Conservative Learning	13 room E.3.04	A method is demonstrated that allows learning even previously unknown objects. For demonstration purposes hand held objects (e.g., coffee cups) are learned in a live demo. In addition, results of visual surveillance applications are shown.	P. Roth
On-line Boosting und Anwendungen	14 room E.3.04	This demo shows several applications of our new real time On-line Boosting algorithm. In particular it will show examples for object tracking, object recognition and dynamic background modelling.	H. Grabner
Visuelle Verkehrsüberwachung	15 corridor	In this demo we will show a vehicle tracking system designed to detect driving violations. The demo will include a live demonstration of tracking toy cars in the corridor and some offline videos from real traffic recordings.	A. Safari J. Santner

Location of demo



Starting point
at office ICG