

Science and Technology Papers

Session 1: Planar Tracking

Accurate and Robust Planar Tracking based on a Model of Image Sampling and Reconstruction Process

Eisuke Ito, Takayuki Okatani, Koichiro Deguchi

Robust Planar Target Tracking and Pose Estimation from a Single Concavity

Peter Kontschieder, Michael Donoser

Toward Augmenting Everything: Detecting and Tracking Geometrical Features on Planar Objects

Hideaki Uchiyama, Eric Marchand

Homography-Based Planar Mapping and Tracking for Mobile Phones

Christian Pirchheim, Gerhard Reitmayr

Session 2: Mobile Localization and Reconstruction

Real-Time Self-Localization from Panoramic Images on Mobile Devices

Clemens Arth, Manfred Klopschitz, Gerhard Reitmayr, Dieter Schmalstieg

Information-theoretic Database Building and Querying for Mobile Augmented Reality Applications

Pawan Baheti, Ashwin Swaminathan, Murali Chari, Serafin Diaz, Slawek Grzechnik

Rapid Scene Reconstruction on Mobile Phones from Panoramic Images

Qi Pan, Clemens Arth, Gerhard Reitmayr, Ed Rosten, Tom Drummond

Session 3: Augmented Reality Browsers

Argon: An AR Web Browser Based on Open Standards

Blair MacIntyre, Alex Hill, Hafez Rouzati, Maribeth Gandy, Brian Davidson

Online User Survey on Current Mobile Augmented Reality Applications

Thomas Olsson, Markus Salo

Session 4: Tracking

Tracking-by-Synthesis Using Point Features and Pyramidal Blurring

Gilles Simon

Evaluating the Impact of Recovery Density on Augmented Reality Tracking

Christopher Coffin, Cha Lee, Tobias Hollerer

Using Egocentric Vision to Achieve Robust Inertial Body Tracking under Magnetic Disturbances

Gabriele Bleser, Gustaf Hendeby

Gravity-aware Handheld Augmented Reality

Daniel Kurz, Selim Benhimane

Session 5: Depth Cameras

Texture-less Object Tracking with Online Training using Depth Camera

Youngmin Park, Vincent Lepetit, Woontack Woo

Real-Time Dense Surface Mapping and Tracking with Kinect

Richard Newcombe, Shahram Izadi, Otmar Hilliges, David Molyneaux, David Kim, Andrew Davison, Pushmeet Kohli, Jamie Shotton, Steve Hodges, Andrew Fitzgibbon

Encumbrance-free Telepresence System with Real-time 3D Capture and Display using Commodity Depth Cameras

Andrew Maimone, Henry Fuchs

RGB-D camera-based parallel tracking and meshing

Sebastian Lieberknecht, Andrea Huber, Slobodan Ilic, Selim Benhimane

Session 6: Rendering

Interactive Visualization Technique for Truthful Color Reproduction in Spatial Augmented Reality Applications

Christoffer Menk, Reinhard Koch

Adaptive Camera-Based Color Mapping For Mixed-Reality Applications

Martin Knecht, Christoph Traxler, Werner Purgathofer, Michael Wimmer

Image-based Cloth Transfer

Stefan Hauswiesner, Matthias Straka, Gerhard Reitmayr

Light Factorization for Mixed-Frequency Shadows in Augmented Reality

Derek Nowrouzezahrai, Stefan Geiger, Kenny Mitchell, Robert Sumner, Wojciech Jarosz, Markus Gross

Session 7: Applications

Providing Guidance for Maintenance Operations Using Automatic Markerless Augmented Reality System

Hugo Álvarez, Iker Aguinaga, Diego Borro

Augmented Reality in the Psychomotor Phase of a Procedural Task

Steve Henderson, Steve Feiner

Is there a Reality in Industrial Augmented Reality?

Pierre Fite-Georgel

MR in OR: First analysis of AR/VR visualization in 100 intra-operative Freehand SPECT acquisitions

Asli Okur, Seyed-Ahmad Ahmadi, Ali Bigdelou, Thomas Wendler, Nassir Navab

Out of reach? – A novel AR interface approach for motor rehabilitation

Holger Regenbrecht, Graham McGregor, Claudia Ott, Simon Hoermann, Thomas Schubert, Leigh Hale, Julia Hoermann, Brian Dixon, Elizabeth Franz

Science and Technology Posters

User Experiences with Augmented Reality Aided Navigation on Phones

Alessandro Mulloni, Hartmut Seichter, Dieter Schmalstieg

Creating Hybrid User Interfaces with a 2D Multi-touch Tabletop and a See-Through Head-Worn Display

Nicolas Dedual, Ohan Oda, Steven Feiner

Usability of One Handed Interaction Methods for Hand-held Projection-based Augmented Reality

Jinhyuk Choi, Youngsun Kim, Gerard Kim

3D High Dynamic Range Display System

Saeko Shimazu, Daisuke Iwai, Kosuke Sato

Deformable Random Dot Markers

Hideaki Uchiyama, Eric Marchand

Virtual Transparency: Introducing Parallax View into Video See-through AR

Alex Hill, Jacob Schiefer, Jeff Wilson, Maribeth Gandy, Blair MacIntyre

Augmenting 3D urban environment using mobile devices

Yi Wu, Maha El Choubassi, Igor Kozintsev

Graph-cut-based 3D Model Segmentation for Articulated Object Reconstruction

Inkyu Han, Hyounghyoun Kim, Ji-Hyung Park

A User Study on the Snap-To-Feature Interaction Method

Gun Lee, Mark Billinghurst

Outdoor Mobile Localization from Panoramic Imagery

Jonathan Ventura, Tobias Höllerer

Evolutionary Augmented Reality at the Natural History Museum

Paul Debenham, Graham Thomas, Jonathan Trout

Adaptive Substrate for Enhanced Spatial Augmented Reality Contrast and Resolution

Markus Broecker, Ross Smith, Bruce Thomas

Transformative Reality: Augmented reality for visual prostheses

Wen Lik Dennis Lui, Damien Browne, Lindsay Kleeman, Tom Drummond, Wai Ho Li

Tightly-Coupled Robust Vision Aided Inertial Navigation Algorithm for Augmented Reality Using Monocular Camera and IMU

Taragay Oskiper, Supun Samarasekera, Rakesh Kumar

Edgel Templates for Fast Planar Object Detection and Pose Estimation

Taehee Lee, Stefano Soatto

An Interactive AR Coloring Book

Adrian Clark, Andreas Dünser, Raphaël Grasset

Fusing the Real and the Virtual: A Depth-Camera Based Approach to Mixed Reality

Philipp Lensing, Wolfgang Broll

Augmenting Magnetic Field Lines for School Experiments

Florian Mannuß, Jan Rübél, Clemens Wagner, Florian Bingel, André Hinkenjann

Interactive Annotation on Mobile Phones for Real and Virtual Space Registration

Hyejin Kim, Gerhard Reitmayr, Woontack Woo

An Empiric Evaluation of Confirmation Methods for Optical See-Through Head-Mounted Display Calibration

Patrick Maier, Arindam Dey, Christian Waechter, Christian Sandor, Marcus Toennis, Gudrun Klinker

Augmented Reality Pipe Layout Planning in the Shipbuilding Industry

Manuel Olbrich, Harald Wuest, Patrick Riess, Ulrich Bockholt

Urban Canvas: Unfreezing Street View Imagery with Semantically Compressed LIDAR Pointclouds

Thommen Korah, Yun-Ta Tsai

Comparing Spatial Understanding Between Touch-Based and AR-Style Interaction

Jason Wither, Sean White, Ronald Azuma

Bare-Hand-Based Augmented Reality Interface on Mobile Phone

Junyeong Choi, Hanhoon Park, Jungsik Park, Jong-Il Park

Visualization of Geometric Properties of Flexible Objects for Form Designing

Goshiro Yamamoto, Ichiroh Kanaya, Keiko Yamamoto, Yuki Uranishi, Hirokazu Kato

"Soul Hunter": A new-type augmented reality application in Theme Parks

DongDong Weng, WeiPeng Xu, Dong Li, YongTian Wang, Yue Liu

Toe Input with Mobile Projector and Depth Camera

Daiki Matsuda, Keiji Uemura, Nobuchika Sakata, Shogo Nishida