
Curriculum Vitae

Margrit Gelautz

Associate Professor

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Education

- Habilitation in Applied Informatics at Vienna University of Technology (2005).
- Ph.D. (with distinction) in Telematics (specialization: image processing/remote sensing) at the Institute for Computer Graphics and Vision, Graz University of Technology. Dissertation in radar image analysis (advisor: Prof. F. Leberl).
- Dipl.-Ing. (MSc, with distinction) in Telematics, Graz University of Technology. Diploma thesis in digital signal processing in application to satellite communication systems (advisor: Prof. O. Koudelka).
- Mag.rer.nat. (MSc, teacher diploma) in Mathematics and Sports at University of Graz.

Professional Experience

- 2007 Guest professor at University of Vienna (Department of Computer Science);
Teaching courses on visualization and computer graphics/augmented reality.
- 2001 - now Associate professor (ao. Univ.-Prof., since 2005) and assistant professor (Univ.-
Ass., until 2005) with the Interactive and Multimedia Systems Group (IMS),
Vienna University of Technology;
Working areas: image/video analysis and synthesis, with a focus on multimedia
applications;
- Development of algorithms (stereo matching, illustrative visualization,
image matting, video coding, etc.);
 - Image stylization - automated generation of sketches, drawings and cartoon-
like illustrations from real images;
 - Stereoscopic visualization techniques, with applications to new generation
of autostereoscopic displays and computer generated art (e.g., stereoscopic
paintings);
 - 3D video/TV (3D scene reconstruction and novel view generation);
 - Studies on scene perception/user interaction (e.g., using eye-tracking);

- Development of ground truth database for evaluation of image matting algorithms (in collaboration with Microsoft Research Cambridge);
 - Parallelization of video coding and stereo algorithms in collaboration with industrial partners (chip design).
- 2000 Scientist at the K-plus Competence Center “Advanced Computer Vision” (ACV) in Vienna;
Working area: high-speed video surveillance, automotive applications.
- 1997 - 2000 Postdoctoral researcher with the Radar Interferometry Group (head: Prof. H. Zebker) at Stanford University, USA;
Working area: radar image processing; comparative study on radar stereo and interferometry for the generation of digital elevation models from satellite images.

Max-Kade fellowship of the Austrian Academy of Sciences.
- 1993 - 1997 University assistant at the Institute for Computer Graphics and Vision, Graz University of Technology;
Working areas: image processing/radar remote sensing with a focus on 3D surface reconstruction from satellite images using stereo und shape-from-shading techniques;
- Development of a radar image simulator in collaboration with Joanneum Research;
 - Processing of radar images from NASA’s Magellan Mission to compute a digital elevation model of planet Venus;
 - Contributions to projects on medical imaging (melanoma recognition) and industrial applications.
- 1993 Software engineer at Vexcel Imaging GmbH in Graz;
Working area: design and implementation of image processing algorithms for development of a high-resolution scanner.

Review

- Journals: Reviewer for IEEE Transactions on Circuits and Systems for Video Technology, Journal of Universal Computer Science, Computer Vision and Image Understanding, International Journal of Remote Sensing, IEEE Transactions on Image Processing, Image and Vision Computing, IEEE Signal Processing Letters, International Journal of Computer Science in Sport, IEEE Transactions on Geoscience and Remote Sensing, International Journal of Biomedical Imaging.
- Projects: - Project evaluator for European Union (FP7 Security Research, Eureka Eurostars Programme);
- Reviewer for Microsoft Research European PhD Scholarship Programme 2007.

Others

Professional Societies:

- Women in Engineering (WIE) officer of IEEE Austria Section;
- Member of Scientific Advisory Board of Austrian Electrotechnical Association (OVE);
- Alumni Association of Scholarship Holders of the Austrian Academy of Sciences (function: treasurer).

Visits:

- Guest scientist at the German Aerospace Agency (DLR, September 1997);
Working area: statistical methods in image processing.
- Stays of several months at Vexcel Corporation, Boulder (CO), USA;
Working area: stereo image matching and scanner development.

Languages: English and Spanish fluent; reading knowledge of French and Italian.

Award:

Recipient of FEMtech Award “Expert of the Month” (Sept 07), granted by the Austrian Ministry BMVIT for significant achievements of women in science and technology.

Projects

- **Polysensor Object Detection on Chip (PODOC)** (2008-2010, planned start: Oct 2008)
Project director at TU Vienna: M. Gelautz
Partners: OnDemand Microelectronics GmbH (Coordinator), Austrian Research Centers (ARC)
Sponsor: *FIT-IT* (FFG - Austrian Ministry BMVIT)
- **Energy Functions for Global Stereo Matching** (2007-2010)
Project director: M. Gelautz
Sponsor: *Austrian Science Fund* (FWF, P19797-N13)
- **New Approaches to Video Matting: Eye-tracking and Parallelization** (2006-2009)
Project director: M. Gelautz
Sponsor: *Microsoft Research European PhD Scholarship Program* (MRL 2007-003)
- **Video Engine Design Methodology Rules (VENDOR)** (2006-2009)
Project director at TU Vienna: M. Gelautz
Partners: OnDemand Microelectronics GmbH (Coordinator), UNI Linz, DICE GmbH
Sponsor: *FIT-IT* (FFG - Austrian Ministry BMVIT, 812429/8328)
- **Novel Methods for Discontinuity Preserving Support Aggregation in Local Stereo Matching** (2008-2009)
Fellowship for PhD student Asmaa Hosni (PhD supervisor: M. Gelautz)
Sponsor: *One-World Scholarship of Austrian Exchange Service (OEAD)* –
“*Oesterreichische Orientgesellschaft Hammer-Purgstall*”

- **3D Video Analysis for Interactive Multimedia Applications (Video3D)** (2002-2006)
 Project director: M. Gelautz
 Sponsor: *Austrian Science Fund* (FWF, P15663)
- **Image and Video Analysis for Artistic Effects (VideoArt)** (2004)
 Project director: M. Gelautz
 Sponsor: *“Hochschuljubiläumsstiftung” of the City of Vienna* (H-1153/2003)
- **Advanced Video Laboratory (AVL)** (2004)
 Project contribution by M. Gelautz: proposal writing and supervision of area 3 (‘Video Acquisition, Eye-tracking, and Multiprocessor System’)
 Sponsor: *Austrian Federal Ministry for Education, Science, and Culture (University-Infrastructure II program)*.
- **Comparison and Combination of InSAR and Stereo Techniques for Topographic Mapping** (finished)
 Project director: M. Gelautz
 Partners: H. Zebker (Stanford University, USA), P. Paillou (University of Bordeaux, France)
 Sponsors: *Austrian Academy of Sciences* (Max Kade Grant) and *European Space Agency* (ESA, ERS AO3-245)
- **Validation of Interferometric Terrain Elevation Data over Three Different Climatic Zones (Desert, Temperate, and Tropical)** (finished)
 Project director: P. Dubois-Fernandez (ONERA, France)
 Partners: M. Gelautz (Stanford University, USA), P. Paillou (University of Bordeaux, France)
 Sponsor: *DLR/NASA* (XSAR/SRTM AO-058)