

Curriculum Vitae of Hannes Kaufmann

Personal Information

Full name: Priv.-Doz. Mag.rer.nat. Dr.techn. Hannes Christian KAUFMANN
Born: April 9, 1974 in Amstetten, Austria

Education

1980 – 1984 Primary School (Volksschule) in Ybbs/Donau
1984 – 1992 Junior and High School (Bundesrealgymnasium) in Wieselburg (focus on mathematics and sciences)
June 16, 1992 Graduation (Matura) from BRG Wieselburg with honors
October 1992 – June 1999 Studies in Mathematics and Descriptive Geometry at Vienna University of Technology with the aim of becoming teacher (Lehramt Darstellende Geometrie / Mathematik)
July 1, 1999 Graduation “Magister der Naturwissenschaften” (comparable to *Master’s degree*) from Vienna University of Technology with distinction.
Thesis: “Geometry of Developable Surfaces with Computational Methods” (“Rechnergestützte Geometrie der Torsen”), supervisor Univ.-Prof. Dr. H. Pottmann
October 1999 – May 2004 Doctoral program in computer science at Vienna University of Technology
June 25, 2004 *PhD Graduation* “Doktor der technischen Wissenschaften” with distinction; Thesis: “Geometry Education with Augmented Reality”, supervisor Ao.Univ.-Prof. Dr. D. Schmalstieg
May 2004 – August 2005 *Postdoc research* at the Interactive Media Systems Group, Institute of Software Technology and Interactive Systems, TU Vienna
May 2010 Habilitation in Applied Computer Science, TU Vienna
Thesis: Applications of Mixed Reality

Awards and scholarships

1995 & 1996 “Leistungsstipendium” - scholarship from Vienna Univ. of Technology for excellent grades
1999 *Windhag* stipend for excellent master studies, awarded by the province of Lower Austria

Professional Activities

June 1994 – September 1994 Programming CAD software (CAD - DG) for the Institute of Geometry, Vienna University of Technology under direction of Prof. Dr. H. Stachel.
1995 – 1996 “Studienassistent” at the Institute of Geometry.
July 1995 Programming control software to analyze soil samples for hydrological conductivity in the laboratory (Austrian Federal Institution of soil water

	research management).
1995 – 2002	Tutor at the Vienna University Computer Center.
1996 – 1998	Web design and webmaster at the Institute of Geometry, TU Vienna.
1997	Content development at Chocolate Multimedia Productions, Vienna.
1997	Co-founding of the company Geometrek (www.geometrek.com) - 3D web solutions. A virtual company consisting of 10-15 VRML experts worldwide.
1997 – 1998	Programming software for geometry teachers within the project “Fächerübergreifende Projekte im Geometrieunterricht” at the Institute of Geometry.
1998 – 2000	Part time employee at <i>virtual real estate</i> (now <i>uma information technology GmbH</i> ; www.uma.at) <ul style="list-style-type: none"> • Participation on the VRML visualization of the Mischek real estate project • Participation on development of the first 3D VRML search engine “Melvil”
May 1997 – May 1999	Research work in the FWF (Austrian Research Fund) Project (P12252) “Approximation of point sets with developable surfaces”, coordinated by Univ.-Prof. Dr. H. Pottmann.
1999 – present	Participating member of ADI-Geometrie (“Arbeitsgemeinschaft didaktische Innovation für Geometrie” / Austrian geometry teachers work group) <ul style="list-style-type: none"> • Development of new teaching material for an educational CD-ROM. Austrian Ministry of Education acquired a general license for use of the CD in all higher Austrian schools (AHS + HTL) in 2000. • 5th grade geometry content creation for eLearning. Amongst European Top 100 in 2005 (Austria: Top 3). Sponsored by BM:BWK eFit Initiative • Contribution to second commercial ADI CD-ROM with innovative teaching contents for geometry education published in 2008.
Jan. 2000	Joined newly founded Interactive Media Systems group at the Institute of Software Technology and Interactive Systems in September 2000. Started development of Construct3D.
October 2000 – July 2002	Full time researcher in the FWF funded project “Mobile Collaborative Augmented Reality” (P14470-INF) at the Institute of Software Technology and Interactive Systems under direction of Dr. Dieter Schmalstieg.
April 2001 – July 2001	“Vertragsassistent” (faculty member) at the Institute of Software Technology and Interactive Systems
2002 – 2003	Civil Service Year at the Austrian childrens’ organisation “Kinderfreunde”.
August 2002 – April 2004	Researcher in the EU IST Project Lab@Future (IST-2001-34204) coordinated by Davarakis C. (Systema Informatics, Greece) at the Institute of Software Technology and Interactive Systems under direction of Univ.-Prof. Dr. Christian Breiteneder.
May 2004 – August 2005	Postdoctoral researcher at the Institute of Software Technology and Interactive Systems, Vienna University of Technology <p>Researcher and supervisor in the FWF Project (P16803) “Educating Spatial Intelligence with Augmented Reality” coordinated by Univ.-Prof. Christian Breiteneder.</p>
September 2005 – present	Assistant Professor (“Universitätsassistent”) at the Interactive Media Systems Group, Institute of Software Technology and Interactive Systems, Vienna University of Technology

Scientific Activities

Program Committee member of

- 1st International Workshop on Virtual Reality Rehabilitation (Mental Health, Neurological, Physical, and Vocational) in Lausanne, Switzerland, Nov. 2002.
- 2nd International Workshop on Virtual Reality Rehabilitation (IWVR), Sept. 2003, Rutgers University, USA.
- 3rd International Workshop on Virtual Reality Rehabilitation (IWVR), 2004
- Eurographics 2007 Education Program (Prague)
- Eurographics 2008 Education Program (Crete)
- Virtual Rehabilitation 2007, 2008 and 2009
- 2nd International Workshop on Digital Media and Its Applications on Museum & Heritage (DMAMH) 2007
- IADIS Visual Communication 2009
- IADIS Web Virtual Reality and 3D Worlds 2009, 2010

Scientific research proposal reviewing for

- Social Sciences and Humanities Research Council of Canada (SSHRC), 2007.
- National Research Foundation, Interactive Digital Media R&D, Singapore, 2007.
- National Research Foundation, Technologies for Learning, Singapore Ministry of Education, 2007.

Scientific reviewing for conferences

- ACM Multimedia 2002, 2003
- IWVR (International Workshop on Virtual Rehabilitation) 2002, 2003, 2004, 2005, 2006
- PERVASIVE Computing 2004
- TeL'04 - Technology Enhanced Learning
- International Symposium on Mixed and Augmented Reality (ISMAR) 2004, 2005
- IEEE Virtual Reality 2005
- 3DPVT 2006 - Third International Symposium on 3D Data Processing, Visualization and Transmission
- Eurographics 2006, 2007, 2008 (Education Programme)
- 4rd, 5th International Workshop on Virtual Reality Rehabilitation (IWVR), 2005, 2006
- CHI 2007
- Virtual Rehabilitation 2007, 2008, 2009
- IADIS Web Virtual Reality and 3D Worlds 2009, 2010

Journal article reviews for

- PRESENCE Special Issue on Virtual Rehabilitation
- Computers & Graphics
- IEEE Computer Graphics and Applications (CG&A)
- IEEE Transactions on Neural Systems & Rehabilitation Engineering
- International Journal of Modelling and Simulation
- The Visual Computer

Book review for

- AK Peters, a book on Virtual Reality

Membership in professional societies and interest groups

- IEEE member & IEEE Communications Society member
- Acting Member of ADG (Association for Geometry in Austria) and ADI (Didactic Innovation)

Projects and Grants

- “Konstruieren von drei- und mehrdimensionaler Geometrie in Augmented Reality“, Research Grant by Vienna University of Technology, 2000-2001.
- “Lab@Future“, EU FP5 IST Project IST-2001-34204, coordinated by Davarakis C. (Systema Informatics, Greece), May 2002 – May 2005.
- Innovative Projekte 2002: “Collaborative Augmented Reality for Teaching“. TU Vienna grant #GZ9006.10/003/2001, 2002-2004.
- “Educating Spatial Intelligence with Augmented Reality“, FWF Project P16803 coordinated by Breiteneder, C., Interactive Media Systems Group, TU Vienna in cooperation with the Institute of Psychology, University Vienna, Dec. 2003 – Dec. 2006.
- “Geometrieinhalte in Virtual- und Augmented Reality mit Construct3D“, BM:BWK Content development project. Jan. 2005 - June 2005.
- “COLLAGE“, EU project under the eLearning call 2005. Subcontractor of BM:BWK. Jan. 2006 – Dez. 2007
- “Discovery Days“, EU project coordinated by the BMUKK. Subcontractor. May 2007 – Oct 2007
- “Development of an Augmented-Reality Dynamic Spatial Test“, FWF Project coordinated by Glück J., Institute of Psychology, University Vienna and Kaufmann H., Interactive Media Systems Group, TU Vienna, Nov. 2006 – Mar. 2010.
- “Playmancer“, EU FP7 ICT Project, research project coordinator at TU Vienna; Project managed by Systema, Greece. Nov. 2007 – Mar 2011.
- “VISION“, EU FP7 AAT Project, research project coordinator at TU Vienna; Managed by Univ. Patras, Greece. Dec 2008 – Jun 2011.
- “PROFITEX“, EU FP7 NMP Project, project leader at TU Vienna; Managed by Univ. Aachen, Germany. Oct 2009 – Sep 2012.
- MINT – A Framework for the Design and Development of Multimodal Interaction on Tabletops, FFG BRIDGE project, project leader. Nov 2009 – Oct 2011.
- Real-time Tunneling Measurement based on an Infrared Optical Tracker, FFG BRIDGE project, project leader. Sep 2009 – Sep 2011.

Lehrtätigkeit / Teaching Experience

- Pedagogical qualification and Master's degree in teaching (Master study: Mathematics and descriptive geometry – teacher program / Lehramtsstudium)

Courses held at Vienna University of Technology

- 1995/1996: Lab course “Geometrie für Vermessungswesen“
- Since 2005: Lecture “Virtual and Augmented Reality” (188.369, VO, 3 ECTS, 60-80 students)
- Since 2007: Seminar “Virtual and Augmented Reality: Advanced Topics” (188.456, AG, 3 ECTS, ~10 students)
- Since 2005: Multiple Seminars and Praktika: Seminar für DiplomandInnen, Seminar (mit Bachelorarbeit), Projektpraktikum, Seminar aus Medieninformatik, Seminar aus Multimedia, Praktikum aus Computergraphik und digitaler Bildverarbeitung, Forschungsseminar aus Computergraphik und Bildverarbeitung, Praktikum aus Multimedia, Projektpraktikum aus Medieninformatik, Seminar aus Bildverarbeitung und Mustererkennung, Freifachpraktikum, Informatikpraktikum 1, Informatikpraktikum 2

Lab tutoring

- 1993 – 1998: Assistant lecturer in the lab “Geometry and Kinematics for Mechanical Engineers”
- 1995 – 2002: Tutor at the Vienna University Computer Center
- 2003 – 2004: Assistant lecturer in the lab “Virtual Reality”

Coached diploma/master theses

- Michael Mehling, “Implementation of a Low Cost Marker Based Infrared Optical Tracking System”, March 2006. (2nd supervisor)
- Tamer Fahmy, “Pivy - Embedding a Dynamic Scripting Language into a Scene Graph Library“, April 2006. (2nd supervisor)
- Robert Liebo, “Visualization of Complex Function Graphs in Augmented Reality“, April 2006.
- Mathis Csisinko, “Long distance distribution of Virtual and Augmented Reality applications“, May 2006.
- Christian Schönauer, “Skeletal Structure Generation for Optical Motion Capture“, December 2007. (EPILOG presentation)
- Marie-Theres Tschurlovits, “Dynamic Differential Geometry in an Educational Augmented Reality Application“, August 2008.
- Petra Kölnsdorfer, Kinetosis / Motion Sickness: A new Approach for Adaptation in Virtual Reality, April 2009.
- Emanuel Vonach & Georg Gerstweiler, Development and Application of an Active Motion Capture Suit for Teaching Motion Skills, in progress.

Doctoral assessing board (PhD committee)

- Edith Pulido, “Application of Causal Diagnosis for Optimization of User Positioning Systems based on Kalman Filtering“, European Doctorate, University of Jaume, Spain, July 2009.