

# HENDRIK O. KNOCHE

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## EDUCATION

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### University College London

London, UK

February 2004 ~ (ongoing)

- PhD in Computer Science (anticipated completion July 2009)
  - Area of focus: Human centred system design
  - Thesis title: *Quality of Experience (QoE) in mobile multimedia applications*
  - Methods: Subjective and objective video quality analysis, eye-tracking, qualitative, quantitative and statistical data analysis
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- Member of Program Committee of European Interactive TV Conference (2007 – ongoing) and International Conference on Designing Interactive User Experiences for TV and Video (uxTV'08)
  - Co-chair of workshops at EuroITV'08, co-chair of demos in EuroITV'09
  - Workshop organizer at EuroITV'06 on Quality of Experience in mobile TV and IST Summit'05 on mobile broadcast potential user interfaces and TV-centric services, and tutorial organizer on user experience at EuroITV'09
  - Reviewer of numerous conference and journal papers (IWQoS, ACM Multimedia, CHI, EuroITV, uxTV, MMSJ, Convergence, Annals of Telecommunications)

### Universität Hamburg

Hamburg, Germany

October 1990 ~ December 1999

- Awarded Masters in Computer Science ('Diplom Informatik'), minor in Pedagogy
- Thesis title: *Integrating Human Perception into QoS Parameter Translation in Distributed Multimedia Services*
- Received Emily B. Stevens Grant to carry out research for thesis at University of California San Diego's (UCSD) cognitive science department
- Implemented, conducted and analysed experiments at the interactive cognition lab on multimedia perception

## WORK EXPERIENCE

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### EU project Universal Satellite Home Connection (UNIC) – Consultant full-time

London, UK

April 2006 ~ October 2008

- Assisted with service definition and service assessment on TV-centric triple play services project
- Carried out scenario based user requirement studies, with mixed elicitation techniques
- Conducted lab and home user trials

### EU project MAESTRO - Research student

Feb 2004 ~ April 2006

- Conducted user needs research in area of mobile TV under supervision of Dr. Angela Sasse
- Ran focus groups in UK and France
- Carried out range of experiments, performed data analysis and wrote up results for peer-reviewed conferences, journals and EU work package deliverables
- Researched, planned, designed, and partially implemented mobile TV demonstrator in MS.net
- Represented UCL at EU project general assemblies, concertation meetings and reviews

### UCL Language Centre - Database designer and programmer (part-time)

London, UK

Mar 2004 ~ (ongoing)

- Redesigned and merged several databases into unified multi-user database
- Front-end programming in VBA
- Performed requirements analysis and implemented project from angle of user-centred and contextual design

**UCSD Interactive Cognition Laboratory - Research Fellow**

San Diego, CA USA

*January 2002 ~ November 2003*

- Supervised and assisted students working in the lab
- Conducted experiments, gathered data, and organized and structured audio-visual data for distributed collaboration project funded by Office of Naval Research
- Assisted in developing media reviewing software
- Developed database front-end for the Center of international and Latin-American studies at UCSD

**www.sport1.de - Head of results, new business and development**

Hamburg, Germany

*September 1999 ~ November 2001*

- Created and led sports results team of six full-time staff and 12 part-time students
- Established work flow of distributed work environment between (Berlin, Hamburg and München)
- Liaised with design, programming, sales, marketing and content production on introduction of new services
- Planned WAP, I-mode and SMS distribution of results
- Collaborated with head of design to build the information architecture of [www.sport1.de](http://www.sport1.de), with wire frames, paper prototypes and wrote functional specifications for the developers
- Continued as freelance consultant for www.sport1.de following resignation

**Ahrensburger Zeitung - Photographer (part-time)**

Hamburg, Germany

*August 2000 ~ September 2001*

- Took photos for regional edition of Hamburger Abendblatt in Stormarn

**Knoche, Leichert, Mack GbR - self-employed**

Hamburg, Germany

*August 1996 ~ (ongoing)*

- Founded company to undertake projects (listed below) for SAT.1, Sports and More, KLEE Spiele and Schmidt Spiele

**Universität Hamburg**

Hamburg, Germany

- Taught tutorial "Theoretische Informatik" for Prof. R. Valk

**Project, IMP GmbH - Observer and data analyst**

Hamburg, Germany

*August 1992 ~ June 2000*

- Gathered computer-based statistics on football for Bundesliga
- Redesigned and wrote statistical data digests for SAT.1 TV commentators (1994-2000)

**Discotheque Zillo/Tonwerk - DJ**

Hamburg, Germany

*September 1994 ~ May 1997*

- DJ'ed on bi-weekly basis at discotheque Zillo (later Tonwerk)

**AVD - Instructor evening course**

Lütjensee, Germany

*1992*

- Taught evening courses on information technology foundation for a now defunct company

**PROJECTS****Vodafone and Nokia - Prototype evaluation, user studies**

London, UK

*January ~ April 2006*

- Ran focus groups, conducted interviews and carried out surveys of mobile community application prototype users
- Analysed usage statistics and user diaries, budgeted and led the study
- Wrote final report for clients

## The Constitution Unit (University College London) - Database designer/programmer

London, UK

June ~ September 2005

- Redesigned and migrated database for research on House of Lords

## Lufthansa and Fraport - Usability researcher

Frankfurt, Germany

April ~ July 2004

- Assisted with large scale user and usability study involving comparative evaluation of four biometric systems at Frankfurt Airport
- Led focus groups, conducted interviews and gathered other relevant data

## Projects commissioned by SAT.1

Hamburg and Berlin

September 1995 ~ June 2000

- Reviewed and cross-compared soccer PC games for the *ran* SAT.1 sport marketing department
- Researched 5000 questions for *ran* Fussball quiz (1995, 1997, 1998 Schmidt Spiele)
- Invented and published *kickran*, a soccer board game (1996 KLEE Spiele GmbH)
- Developed and commissioned stock market-like board game for *ran* SAT.1 sport (1998, unpublished)
- Coordinated four piece team on content production and quality assurance for *ran* Fanguide (2000 sports & more), including liaising with all 18 major football league clubs in Germany

**Language Skills:** Native German, fluent English, intermediate French, basic Spanish

**Programming Languages:** Visual Basic and VBA, C#, Scheme, Modula

## PUBLICATIONS - BOOK CHAPTERS & JOURNALS

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Cesar, P., **Knoche, H.**, Bulterman, D.C.A (2009) From One to Many Boxes: Mobile Devices as Primary and Secondary Screens. In A.C. Roibás, A. Marcus, and R. Sala (eds.), *Mobile TV: Customizing Content and Experiences*. Heidelberg, Germany: Springer-Verlag (2009)

**Knoche, H.**, Sasse, M. A. (2009) The Big Picture on Small Screens: Delivering acceptable video quality in mobile TV. To appear in *ACM TOMCCAP*

Cesar, P., Bulterman, D. C. A., Geerts, D., Jansen, J., **Knoche, H.**, Seager, W. (2009) Enhancing Social Sharing of Videos: Fragment, Annotate, Enrich, and Share. To appear in *ACM TOMCCAP*

**Knoche, H.**, Sasse, M. A. (2008) Getting the big picture on small screens: Quality of Experience in mobile TV. In Ahmad, A. & Ibrahim, I.K. (eds.) *Multimedia Transcoding in Mobile and Wireless Networks*, Chapter 3, pp. 31-46

**Knoche, H.**, McCarthy, J., Sasse, M. A. (2008) How low can you go? The effect of low resolutions on shot types. In *Personalized and Mobile Digital TV Applications in Springer Multimedia Tools and Applications Series*, Vol. 36, Issue 1-2 (January 2008), pp145-66

**Knoche, H.**, Sasse, M. A. (2007) Getting the big picture on small screens: Quality of Experience in mobile TV. In Lekakos, G. Choriantopoulos, K. (eds.) *Interactive Digital Television: technologies and applications*, Idea Group

## PUBLICATIONS - CONFERENCES

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Seager, W., **Knoche, H.** (2009) Good to See You - User responses to a TV-based video telephony service. To be presented at EuroITV'09 workshop on *Enhancing Social Communication and Belonging by Integrating TV Narrativity and Game-Play*, 03 June, Leuven, Belgium

**Knoche, H.**, Sasse, M. A. (2008) The sweet spot: How people prefer to trade off size and definition on mobile devices. In Proceedings of ACM Multimedia 2008, Vancouver, BC, Canada, Oct 27 – Nov 1 (best paper in HCD track)

Cesar, P., Bulterman, D. C. A., Geerts, D., Jansen, J., **Knoche, H.**, Seager, W. (2008) Enhancing Social Sharing of Videos: Fragment, Annotate, Enrich, and Share. In Proc. ACM Multimedia, Vancouver, BC, Canada (best paper in Applications track)

Boccolini, G., **Knoche, H.**, Luise, M., Merour, J.-M., Vignaroli, L. (2008) Broadband interactive services provided through TV-centric technologies via bidirectional satellite connection. In Adj. Proc. of EuroITV 2008, Salzburg, Austria, July 3-4, 2008

- Bulterman, D. C. A., Cesar, P., Jansen, J., **Knoche, H.**, Seager, W. (2007) Enabling Pro-Active User-Centered Recommender Systems: An Initial Evaluation in Proc.of the IEEE Symposium on Multimedia ISM 2007, Taichung, Taiwan, R.O.C., December 10-12
- Seager, W., **Knoche, H.** (2007) "It's going to be havoc": Shared control of a TV display. Presented at *Sharable Interfaces Workshop*. 19-20 June, Milton Keynes, UK
- Knoche, H.**, Papaleo, M., Sasse, M. A., Vanelli-Coralli, A. (2007) The Kindest Cut: Enhancing the User Experience of Mobile TV through Adequate Zooming, Proc. ACM Multimedia 2007, 23-29 September, Augsburg, Germany
- Seager, W., **Knoche, H.**, Sasse, M. A. (2007) TV-centricity - Requirements gathering for triple play services. In *Proceedings of the European Interactive TV conference 2007*, 24-29 May, Amsterdam, The Netherlands.
- de Koning, T.C.M, Veldhoven, P., **Knoche, H.** Kooij, R. E. (2007) Of MOS and men: bridging the gap between objective and subjective quality measurements in mobile TV. In *Proc. IS&T/SPIE*, San Jose, CA, USA.
- Knoche, H.**, McCarthy J., Sasse, M. A. (2006) Reading the Fine Print: The Effect of Text Legibility on Perceived Video Quality in Mobile TV. In *Proceedings of ACM Multimedia*, October 22-27, Santa Barbara, USA.
- Sasse, M. A., **Knoche, H.** (2006) Quality in Context - an ecological approach to assessing QoS for mobile TV. In Proc. of 2nd ISCA/DEGA Workshop on Perceptual Quality of Systems, 3-5 September, Berlin, Germany.
- Knoche, H.**, de Meer, H., Kirsh, D. (2006) Extremely Economical: How Key Frames Affect Consonant Perception under Different Audio-Visual Skews in Proc.of IEA2006, 10-14 July, Maastricht, The Netherlands.
- Knoche, H.**, McCarthy, J. D., Sasse, M. A. (2006) A close-up on Mobile TV: The effect of low resolutions on shot types. In Proceedings of EuroITV, 25-26 May, Athens, Greece.
- Knoche, H.**, Sasse, M. A. (2006) Breaking the news on mobile TV: user requirements of a popular mobile content. In Proc. of IS&T/SPIE Symposium on Electronic Imaging, 15-19 January 2006, San Jose, CA, USA.
- Knoche, H.**, McCarthy, J. D., Sasse, M. A. (2005) Can Small Be Beautiful? Assessing Image Size Requirements for Mobile TV. In Proc. of ACM Multimedia 2005, 561-, 6-12 Nov., Singapore.
- Knoche, H.**, McCarthy, J. D. (2005) Design Requirements for Mobile TV. In *Proceedings of Mobile HCI 2005* , 19-22 September, Salzburg, Austria, pp 69-76.
- Knoche, H.**, McCarthy, J. D. (2005) Good News for Mobile TV. *Proceedings of WWRF14*, 7-8 July 2005, San Diego, CA, USA.
- Knoche, H.**, de Meer, H., Kirsh, D. (2005) Compensating for Low Frame Rates. *Proceedings of CHI 2005*, 4-7 April 2005, Portland, OR, USA.
- Knoche, H.**, McCarthy, J. D. (2004) Mobile Users' Needs and Expectations of Future Multimedia Services. *Proceedings of WWRF12*, 10-12 Nov 2004, Toronto, Canada.
- Knoche, H.**, de Meer, H. (1999) Utility Curves: Mean Opinion Scores considered biased. *Proceedings of IWQoS'99*, 10-11 May, London, UK.
- Knoche, H.**, H. de Meer (1997) Quantitative QoS Mapping: A unifying approach. *Proceedings of IWQoS'97*, 10-11 May, New York, NY, USA, pp. 347-58.