

HYOWON LEE B.Eng., M.Sc., Ph.D.

<http://www.computing.dcu.ie/~hlee/>

Last updated : 12 Dec 2009

Designer-Researcher in the field of
Interaction Design & Visualisation for Multimedia Applications

Member of CLARITY: The Centre for Sensor Web Technologies

Centre for Digital Video Processing
Dublin City University
Glasnevin, Dublin 9, Ireland
Tel: -353 +01 7005829
Email: hlee@computing.dcu.ie

CURRENT WORK: SUMMARY

Position

Designer-Researcher, Centre for Digital Video Processing, CLARITY: Centre for Sensor Web Technologies, Dublin City University, Ireland (July 2001 – Now)

Work Description

My role within the Centre is to apply Human-Computer Interaction (HCI) in the form of *Interaction Design, Visualisation, and Usability Study* to the technologies being developed within the Centre. This requires extensive brainstorming to come up with various application scenarios, designing and prototyping of possible interaction strategies and visualisation techniques for such scenarios, and working on deployment and conducting subsequent usability studies. I design high-level concepts as well as detailed widget-level design for layout, colour and style to create attractive and usable user-interfaces.

I interact with a number of Ph.D students and summer interns within the Centre, as well as taught Master students within the School, formally and informally supervising their work.

Regarding teaching, I am a module coordinator and lecturer of a 2-hour/week module called Web Design for the Masters in e-Commerce (taught Master) course jointly run by the School of Computing and the Business School within the University. I have been constantly developing and delivering this module since 2001, each year bringing my own research insights into classes and getting student feedback into the research.

EDUCATION

B.Eng in Computer Science (Mar 1990 – Feb 1995)

Soong Sil University, 511 Sangdo-Dong, Dongjak-Gu, Seoul, South Korea 156-743

GPA: 3.58/4.50 (arithmetic average: 87.8/100)

*University Full-Scholarship: I was the only recipient of the **University's 4-year full-scholarship** on entrance, for having received the *highest scores amongst all applicants* at the National University Entrance Exam in 1990. I was invited to the Blue House by the then President of Korea, Roh Tae Woo, for this achievement.

M.Sc in Information and Library Studies (Sep 1995 – Dec 1996)

The Robert Gordon University, Schoolhill, Aberdeen AB10 1FR, Scotland, U.K.

*My M.Sc dissertation, entitled "The Use of Microsoft Access for Image

Database Construction and Use: An Investigation”, was *one of the 3 runners-up* at **LIRG (Library & Information Research Group, U.K.) Postgraduate Prize** in 1997, and was highly commended by the Group (appeared on IIS newsletter Inform no.199, November 1997).

Ph.D in Computer Science (Sep 1997 – Mar 2001)

Dublin City University, Dublin, Ireland

Ph.D. Thesis: "User Interface Design for Keyframe-based Content Browsing of Digital Video"

My thesis involved the areas of Human-Computer Interaction, Visualisation & Evaluation, and especially analytic design methodology applied to content-based digital video retrieval systems. I developed a design framework for explaining/describing critical dimensions of interactive visualisation when automatically extracted keyframes are presented, and from this completely new visualisation schemes for keyframe browsing could be designed. This resulted in a number of novel video browsers which I implemented, incorporated in a web-based video browsing system which I designed and deployed campus-wide, and evaluated with real users.

*The year after I completed my Ph.D, I was awarded the **Albert College Junior Fellowship** (March 2002), a competitive scheme open to all academics and research staff with only a small number awarded each year by the University.

RESEARCH ACTIVITIES

My research focus can be summed up as **Human-Computer Interaction & Visualisation applied to emerging Multimedia field**, i.e. *interaction design & visualisation that adopt newly-emerging multimedia technologies as its back-end*. Platforms I work on include:

Web-based desktop interaction design (1998 – Now)

I have designed a number of novel Web-based applications that use content-based automatic indexing techniques. My largest-scale work was the design/evaluation of an online news video archive called Físchlár-News summarised in:

Lee H, Smeaton A.F, O'Connor N. and Smyth, B. User Evaluation of Físchlár-News: An Automatic Broadcast News Delivery System. **ACM Transactions on Information Systems, 24(2), 2006.**

Mobile (hand-held) interaction design (2000 – Now)

I have been working on small-screen interfaces and especially trying to integrate automatic indexing techniques and recommendation techniques to reduce the interaction burden of the user. My knowledge and experience in mobile HCI issues and leveraging multimedia techniques for mobile is summarised in a recent book chapter I wrote:

Lee H, Gurrin C, Jones G and Smeaton A.F. Interaction Design for Personal Photo Management on a Mobile Device. Book Chapter in: **Handbook of Research on User Interface Design and Evaluation for Mobile Technology, 2008**, Lumsden, Joanna. (Ed.), IGI Publishing, ISBN: 978-1-59904-871-0.

TableTop interaction design (2005 – Now)

Large, horizontal touch-sensitive display is yet another platform I have worked with. I developed a special design framework for multi-user co-located interface and evaluated various design instances, summarised in:

Smeaton A.F, **Lee H**, Foley C and Mc Givney S. Collaborative Video Searching on a Tabletop. **Multimedia Systems Journal, 12(4-5), 2006.**

Interactive TV design (2007 – Now)

Leveraging emerging multimedia techniques for TV is surely a good idea, but a number of differences in input method (keyboard & mouse vs. remote control), usage (task-focused vs. leisure/entertainment), and user attitude (lean-forward vs. lean-back) makes design for interactive TV challenging. I designed interface for a novel interactive TV that takes advantage of multimedia techniques but in such a way that it is still strikingly simplistic and easy to use, summarised in:

Lee H, Ferguson P, Gurrin C, Smeaton A.F, O'Connor N and Park H. Balancing the Power of Multimedia Information Retrieval and Usability in Designing Interactive TV. International Conference on Designing Interactive User Experiences for TV and Video, Mountain View, CA, 22-24 October 2008.

Across these platforms, some example projects I have been involved in are:

1. In a project funded by Enterprise Ireland, I designed a web-based interface for a novel online video search/browse system, deployed it within the campus, and over a 3-year-period have refined its interface. I conducted a large-scale long-term user trial with this system, resulting in a set of design guidelines for future researchers (2001-2005);
2. In a project funded by Samsung Electronics, I designed a novel interface for an automatic photo-blogging system during which I led the design refinement through an intensive 11 iterations in 5 months (Feb – Jul 2006);
3. In a project funded by a UK-based company, I designed a novel map-based navigation interface for annotating video footage where intersecting trajectories of videos captured while driving a car were visualised on Google Maps (Oct 2005 – Jun 2007);
4. In the annual TRECVID conference where participating groups around the world develop video retrieval systems and compare their performances, I have designed interfaces to our centre's video retrieval systems and led user experiments every year. Our Centre's systems have been frequently praised and highlighted for their polished and commercial feel, and have been model interfaces which other participating groups followed year after year (May 2001 – Now);
5. In an Enterprise Ireland-funded L'OEUVRE project, I designed the interfaces for an object-based video retrieval system in which the user can provide relevance feedback based on a particular object within a video keyframe, and helped design its series of user experimentations. The vision of the designed interaction scheme is even now still ahead of what automatic object detection community can do, thus serving as an eventual target scenario (Feb 2004 – Dec 2005);
6. In a project developing scene classification in films, I designed the interface to the automatic scene detection system which allows the user to quickly search dialogue/action/montage scenes in films. The system was deployed in the School of Communication (Mar – Nov 2006);
7. In another Enterprise Ireland project called MediAssist, I designed the interface to a personal photo management system that features meta-data search based on location, time, people, building, and allows semi-automatic annotation (May 2005 – Aug 2006);
8. In the SenseCam project funded by Microsoft Research, I designed an interactive image browser which allows its users to review thousands of photos on a single screen in an efficient way. Appropriate interaction design for LifeLogging technology is still its infancy and I continue to research and design for this (Jul 2006 – Now);
9. Within the Adaptive Information Cluster, I designed an interactive visualisation interface that shows a soccer player's biometric data along with his location in the field and the long-shot and close-up videos of the player, all temporally synchronised and browsable (Nov 2007);

10. Within CLARITY Centre for Sensor Web Technologies, I am designing a touch-screen In-Home Display interface where a home user can be constantly informed about home energy use (2009 -);
11. I am studying interaction strategies for large multi-touch Wall which we got since Summer 2009, by characterising its interaction and applying multimedia and sensor web technologies to design suitable interactive visualisation on the Wall (2009 -);
12. In a collaboration with Disney, I am designing highly novel mobile device that will be used by Disney theme park visitors (2009 -).

There are many other smaller projects I have been involved in and in particular lead the interaction design & visualisation. As most of the Centre members are technical/technology developers, my work orients itself as ‘interaction/visualisation consultancy’ within the Centre. I organise brainstorming, sketching, discussion sessions in order to come up with new ideas, scenarios, and application concepts.

SUPERVISION

I have been engaged in a number of mentoring/advisory activities over the past 5 years. As some of my Centre’s research students/staff are involved in interaction design & visualization aspect of system research and development, I support them as an informal/formal supervisor. In particular, I co-supervised 4 PhD students who successfully completed (2006 - 2009) and current 2 PhD students.

I have many years of experiences in supervising undergraduate, masters and interns. These include:

- MSc project: I officially supervised this MSc project titled “Green Energy Portal” this summer (May – August 2008)
- MSc project: I was an informal advisor for this MSc project titled “Decision Support System for Virtual Worlds” (May – August 2008)
- MSc project: I was an official supervisor for a project titled: “SmartPolice” (May-August 2009)
- Online Dublin Computer Science Summer School (ODCSSS) Summer 2009 – I officially supervised a summer student funded by SFI UREKA project, titled “Visualising Environmental Data on Interactive Wall”.
- Online Dublin Computer Science Summer School (ODCSSS) Summer 2008 – official supervisor for “Online Sharing of Environmental Data to Enhance Awareness” 2008.
- 4th Year project titled “iLogLife – Context-Aware Reminder and Life Log Archive”. I was an informal advisor, who at the end of the project **won the IBM Open Source Competition**, May 2008.
- Online Dublin Computer Science Summer School (ODCSSS) Summer 2007 – I officially supervised the summer student funded by SFI UREKA project, working on “Interactive Browsing for a Visual Diary”, who at the end of the course was **awarded the IBM Presentation Award** for his work.
- Taught M.Sc project (2007): I officially supervised the two students’ project on online sports news aggregator system design & implementation, successfully completed.
- An internship staff (2009): I co-supervised an intern working on diet monitoring interface design and implementation.
- An internship staff (2006): I co-supervised an intern from Eurocom (France) on PhotoBlogging Interaction Design.
- An internship staff (2005): I co-supervised a 4th year intern on CCTV Search

System Development.

- 4th year undergraduate project (2003/4) – I co-supervised on the work of Touchscreen Interface to Video Browsing System.

TEACHING

Module Coordinator & Lecturer – Web Design (CA553) for M.Sc. in e-Commerce, DCU: 2-hour/week, 1 semester/year; 40-50 students in the class (2001 – Now)

I am **fully responsible for the module**, from syllabus design to continuous assessments, exam preparation, to marking as well as delivery of all class lectures and lab tutorials. I have been constantly developing this module since 2001 until now.

The module focuses on design principles, HCI theories and usability studies, and in particular applies these to a web-specific environment. Also introduced in the module are Web technologies including Cocoon XML publishing framework (since 2002) and Web 2.0 (since 2005).

Teaching Survey

I have been conducting teaching surveys for my classes each year to get students' feedback in order to improve my lecture (this is not in any way mandatory within the department or in the university). I use a subset of DCU's question bank to customize a suitable questionnaire for my own class. The most noticeable comments from my students have been the way I used PowerPoint slides for my lectures and the abundance of up-to-date visual examples I use. In my autumn class 2007/8, among 28 students (out of 32) who responded:

- **93%** of them strongly agreed/agreed "the lecturer is approachable"
- **89%** of them strongly agreed/agreed "the lecturer is enthusiastic about teaching"
- **86%** of them strongly agreed/agreed "the lecturer is well prepared"
- **86%** of them strongly agreed/agreed "the lecturer makes good use of examples"
- **79%** of them strongly agreed/agreed "I have learned a lot from this module"

Examples of survey results are attached in the application form. Full survey results can be found on my homepage's teaching section:

<http://www.computing.dcu.ie/~hlee/teaching.html>

Other lectures I have delivered in the past include:

GUI Programming and HCI (CA567) for M.Sc. in Computer Applications for Education, DCU: 2-hour/week for 6 weeks; 20 students in the class (2002)

As a lecturing support, I gave six 2-hour lectures on design principles and usability guidelines.

Guest/Invited Lectures

I have given a number of guest lectures in HCI/Visualisation and Multimedia field. My lectures on design principles and usability principles have been very popular for their practical and real-life examples, implications for future possibilities and for the overall quality of the lectures. So far I have given a number of external invited lectures/seminars, including (for teaching purposes, not for research dissemination):

- Invited Lecture to **Masters in Computing for Education** (25 April 2002) School of Computing, Dublin City University. "Físchlár Digital Video Library and User-Interface Design"

- Invited Lecture to **Undergraduates in Multimedia** (27 September 2002) School of Informatics, National College of Ireland. “Design Principles and Guidelines – Essential for Good Design”
- Invited Lecture to **Masters in Computing for Education** (26 February 2003) School of Computing, Dublin City University. “Principles for Web Design”
- Invited Lecture to **Masters in Marketing** (18 March 2003) Business School, Dublin City University. “Web Design – Implementation Basics and Design Principles”
- Invited Lecture to **Masters in Marketing** (2 March 2004), Business School, Dublin City University. “Web Design: Part I: The Basics of Web Site Implementation; Part II: Usability Principles”
- Seminar for **National Centre for Language Technology (NCLT)** (10 March 2004). “User-Interface Design: Design Guidelines – Essential for Good UI Design”
- Invited Lecture to **School of Education Studies**, Dublin City University (24 October 2005). “Design Guidelines – Essential for Usability”
- Invited Lecture to **School of Education Studies**, Dublin City University (17 & 24 October 2007). “Interaction Design and Usability”
- Invited Lecture for Computing, **Dublin Institute of Technology** (7 November 2007). “Introduction to Design Guidelines”
- Invited Lecture for **M.Sc in Education and Training**, Dublin City University (15 December 2007) “Evaluation Techniques: Ensuring Usability for Interactive Technology”
- Invited Lectures for **M.Sc in Education**, Dublin City University (15, 27 November 2008) “Introduction to Design Guidelines & Evaluation Techniques: Ensuring Usability for Interactive Technologies”

Module Design Experience

- Web Design – I have been continuously developing this module (2001 – Now).
- CompuTY – This is a summer course for Transition year students organised by DCU. I was involved in its initial course design in terms of selecting & providing teaching materials (12/2004 – 01/2005).

PATENTS

Co-Inventor, Multimedia Management (publication number: WO2004043029, International/European). Smeaton A.F., Marlow S, Murphy N, O’Connor N, McDonald K, **Lee H**, Herrera F, Browne P, and Pollard S. 21 May 2004.

Co-Inventor, Method and apparatus to provide broadcasting program information on screen of broadcast receiver, 2009. Jung T, **Lee H**, Choi Y, Smeaton A.F and Gurrin C.

OTHER RESEARCH SERVICES/ACTIVITIES

In order to extend and expand my research capacity, I have been actively involved in a number of research-related services/activities, as summarised below.

Editorial Board

- International Journal of Mobile Human-Computer Interaction, 2008 – 2010.

Professional Memberships

- Member of ACM (Association for Computing Machinery), 2004 - Now.
- Member of IEEE (Institute of Electrical and Electronics Engineers), 2006 – Now.
- Member of The Ergonomics Society, 2009 – Now.

Programme Committees

- 4th International Conference on Image and Video Retrieval (CIVR 2005), Singapore, 20-22 July 2005. (Technical Programme Committee)
- 28th European Conference on Information Retrieval (ECIR 2006), Imperial College London, U.K., 10-12 April 2006. (Technical Programme Committee)
- 30th European Conference on Information Retrieval (ECIR 2008), Glasgow, Scotland, 30 March – 3 April 2008 (Programme Committee)
- 3rd International Conference on Semantic Digital Media Technologies (SAMT 2008), Koblenz, Germany, 3-5 December 2008 (Programme Committee)
- 15th International Multimedia Modeling Conference (MMM'09), Sophia-Antipolis, France, 7-9 January 2009 (Programme Committee)
- 3rd Irish Human-Computer Interaction Conference (iHCI'09), Dublin, Ireland, 17-18 September 2009 (Programme Committee)
- 4th International Conference on Semantic and Digital Media Technologies (SAMT 2009), Graz, Austria, 2-4 December 2009 (Programme Committee)

Conference/Workshop Organisation

- Local Organiser, DELOS-NSF Workshop on Personalisation and Recommender Systems in Digital Libraries, Dublin City University, Ireland, 2001.
- Publicity Chair and organisation, CIVR 2004 – International Conference on Image and Video Retrieval, Dublin City University, Ireland, 21-23 July, 2004.
- Publicity Chair and organisation, ESSIR 2005 – 5th European Summer School in Information Retrieval, Dublin City University, Ireland, 5-9 September, 2005.
- Submission Chair, 15th International Multimedia Modeling Conference (MMM'09), Sophia-Antipolis, France, 7-9 January 2009.
- General Chair, 3rd Irish Human-Computer Interaction Conference, Dublin, Ireland, September 2010.
- Publicity Chair, 33rd European Conference on Information Retrieval (ECIR 2011), Dublin, Ireland, 2011.

Paper Review for Journal, Book Chapter, Conference, Workshop

- 15th Annual Symposium on User Interface Software & Technology (UIST '02), Paris, France, 27-30 October 2002.
- 26th Annual International ACM Conference on Research and Development in Information Retrieval (SIGIR 2003), Toronto, Canada, 2003.
- 27th European Conference on Information Retrieval (ECIR '05), Santiago de Compostela, Spain, 21-23 March, 2005.
- 28th Annual International ACM Conference on Research and Development in

- 4th International Conference on Image and Video Retrieval (CIVR 2005), Singapore, 20-22 July 2005.
- 28th Annual International ACM SIGIR Conference (SIGIR 2005), Bahia, Brazil, 15-19 August, 2005.
- ACM Multimedia Conference, Singapore, 6-11 November, 2005.
- Information Processing and Management Journal, December 2005.
- 28th European Conference on Information Retrieval (ECIR 2006), Imperial College London, U.K., 10-12 April 2006.
- International Conference on Multimedia & Expo (ICME 2006), Toronto, Canada, 9-12 July 2006.
- Information Processing and Management Journal, June 2006.
- ACM Symposium on Applied Computing, Multimedia & Visualization Track, Seoul, Korea, 11-15 March 2007.
- Information Processing and Management Journal, February 2007.
- Handbook of Research on User Interface Design and Evaluation for Mobile Technology, 2007.
- ACM Transactions on Multimedia Computing, Communications, and Applications (ACM ToMCCA), February 2007.
- ACM Multimedia Conference, Augsburg, Germany, 23-29 September, 2007.
- TRECVID BBC Rushes Summarization Workshop (TVS 2007), ACM Multimedia 2007.
- Multimedia Tools and Applications Journal, Special Issue on Semantic Multimedia, June 2007.
- ACM International Conference on Human-Computer Interaction (CHI 2008), Florence, Italy, 5-10 April 2008.
- 30th European Conference on Information Retrieval (ECIR 2008), Glasgow, Scotland, 30 March – 3 April 2008.
- TRECVID Rushes Summarisation Workshop (TVS 2008), ACM Multimedia 2008.
- International Journal of Mobile Human-Computer Interaction, August 2008.
- IEEE Transactions on Multimedia, August 2008.
- Machine Vision and Applications Journal, October 2008.
- Multimedia Tools and Applications Journal, April 2009.
- The 2nd IEEE International Workshop on Data Semantics for Multimedia Systems and Applications, 2009.
- Information Processing and Management Journal, August 2009.
- CHI 2010 - ACM International Conference on Human Factors in Computing Systems.
- ECIR 2010 - 32nd European Conference on Information Retrieval.
- IUI 2010 - International Conference on Intelligent User Interfaces.

FACULTY OUTREACH ACTIVITIES

- DCU e-Media Day: presentation at the workshop on Físchlár Digital Video System, 18 February 2004.
- Poster Session support at the Faculty Postgraduate Open Evening, 26 April 2005.
- Presentation of interesting research projects within School of Computing for school children visit day, 8 November 2006.
- Demo organisation support, DCU Open Day, 21-22 November 2008.

INVITED TALKS & SEMINARS

I have been invited to workshops and seminars to inform, share, discuss and to highlight my research experiences and findings.

Invited Seminar at Information Retrieval Group, Glasgow University, U.K. "Design of Video Browser Interfaces for Físchlár" (6 November 2000)

Invited Seminar at Information Retrieval Group, Glasgow University, U.K. "Developing the Físchlár Digital Video System" (12 November 2001)

Invited Speech at the Experts Workshop: Perspectives on Networked Knowledge Spaces. MARS – Exploratory Media Lab, Fraunhofer Institute Media Communications, Sankt Augustin, Germany. "Físchlár Digital Video Library: an online video analysis, browsing, searching & playback system" (25-26 October 2002)

Invited Seminar at The Open Video Project, Interaction Design Lab, University of North Carolina at Chapel Hill, NC. "Físchlár Digital Video Library" (25 November 2002)

Invited Seminar at Minds, Computing Society at National University of Ireland Maynooth "Interaction Design for Video Retrieval: Connecting Functionality to Usability" (7 December 2005)

Invited Speech at the SEMPS 2006 - 1st International Workshop on Semantic-enhanced Multimedia Presentation Systems, Athens, Greece. "Enhancing the Presentation of Multimedia Using Extracted Semantics" (6 December 2006)

Invited Participation at the SWUI 2007 – 4th International Semantic Web User Interaction Workshop, Cambridge, Massachusetts and Zurich, Switzerland (7 June 2007)

Invited Seminar at Centre for Interaction Design, Napier University, Edinburgh, U.K. "Interaction Design for Emerging Multimedia: Connecting Functionality to Usability" (9 November 2007)

Invited Seminar at Centre for Interaction Design, Napier University, Edinburgh, U.K. (12 September 2008)

Invited Seminar at Glasgow Interactive Systems Group, Glasgow University, U.K. "Interaction Design for Emerging Multimedia Technology" (20 November 2008).

Invited Seminar at Interactive Technologies Group, University of Brighton, U.K.

“Interaction Design for Multimedia: Connecting Emerging Multimedia to Usable Application Scenarios” (8 December 2008).

Seminar talk at the Centre for HCI Design, City University London, London, U.K., “Interaction Design for Multimedia: Connecting Emerging Multimedia Techniques to Usable Application Scenarios” (27 March 2009)

Invited seminar talk at Interaction Design Lab, University of North Carolina at Chapel Hill, Chapel Hill, NC, USA.

“Interaction Design for Multimedia: Connecting Emerging Multimedia Techniques to Usable Application Scenarios” (3 April 2009)

Presentation at the Centre for HCI Design, City University London, London, U.K. “Explorative Interaction Design for Creative Requirements” (1 June 2009)

Invited seminar at StreamSage, Washington DC, USA.

“Interactive TV Applications for Information Retrieval” (31 July 2009)

Invited presentation at: Symposium on Designing for Interactive Video. University of North Carolina at Chapel Hill, Chapel Hill, NC, USA.

“Browsing Digital Video: Coupling Novel Interaction Platforms with Multimedia Tools” (4 August 2009)

Seminar at the Interaction Design Lab, University of North Carolina at Chapel Hill, Chapel Hill, NC, USA.

“Interaction Platform-Oriented Perspective in Designing Novel Applications: Framing the Development of Novel Technologies” (5 August 2009)

Seminar at Helsinki University of Technology.

“Designing Novel Applications for Emerging Technologies” (26 November 2009)

Seminar at Helsinki Institute for Information Technology.

“Designing Novel Applications for Emerging Technologies” (27 November 2009)

HONOURS & AWARDS

College Four-year Full Scholarship (1990-1995) by Soong Sil University, Seoul, South Korea.

Recipient of 4-year full scholarship during the undergraduate course, an award for receiving highest result on the entrance examination among all applicants. I was invited by the then President of South Korea, Tae-Woo Roh, to the Blue House for this achievement (April 1990).

Postgraduate Prize runner-up (1997) by Library & Information Research Group (LIRG), U.K.

M.Sc dissertation (at School of Information & Media, Robert Gordon University, U.K.) was one of the runners-up at LIRG Postgraduate Prize 97, and was highly commended by the Group (appeared in IIS newsletter Inform no.199, November 1997).

Albert College Junior Fellowship (2002) by Dublin City University, Ireland.

Recipient of the Albert College Junior Fellowship, a competitive scheme open to all academic and research staff in the university.

DCU Research Fellowship (2008-2010) by Dublin city University, Ireland.

Recently awarded the competitive 2-year Fellowship, supporting research visits and networking in order to help establish myself as a leading researcher in the field.

TRAINING/ COURSES ATTENDED

- Understanding the Research Environment at DCU Workshop, 25 October 2006.
- Enterprise Ireland Commercialisation Workshop, DCU, 27 November 2007.
- Funding Available to Contract Researchers and How to Get It! DCU, 28 February 2008.
- Developing and Managing your Research Career, DCU Research Development Programme 2008, February – March 2008.
- Enterprise Ireland Information Workshop, DCU, 5 June 2008.
- Supporting Postgraduate Students and Early Stage Researchers in an Academic Context – Training workshop at DCU, 16 September 2008.
- Project Management for Researchers – Training course at DCU, 6-7 April 2009.

PUBLICATIONS

62 Peer-reviewed publications, including **2** book chapters and **6** journal articles. My publications received a **total 348 citations** and **h-index of 13**, according to Google Scholar, as of 12 Dec 2009. Following is the full list in reverse-chronological order.

Journal Articles & Book Chapters

1. **Lee H**, Smeaton A.F, O'Connor N, Jones G, Blighe M, Byrne D, Doherty A and Gurrin C. Constructing a SenseCam Visual Diary as a Media Process. **Multimedia Systems Journal**, Special Issue on Canonical Processes of Media Production, 14(6), pp341-349, 2008.
2. **Lee H**, Gurrin C, Jones G and Smeaton A.F. Interaction Design for Personal Photo Management on a Mobile Device. Book Chapter in: **Handbook of Research on User Interface Design and Evaluation for Mobile Technology**, Lumsden, Joanna. (Ed.), IGI Publishing, ISBN: 978-1-59904-871-0, pp69-85, 2008.
3. Lehane B, O'Connor N, **Lee H** and Smeaton A.F. Indexing of Fictional Video Content for Event Detection and Summarisation. **EURASIP Journal on Image and Video Processing**, Special Issue on Multimodal Audiovisual Content Abstraction, 2007.
4. **Lee H**, Smeaton A.F, O'Connor N. and Smyth, B. User Evaluation of Físchlár-News: An Automatic Broadcast News Delivery System. **ACM Transactions on Information Systems (TOIS)**, 24(2), 2006.
5. Smeaton A.F, **Lee H**, Foley C and Mc Givney S. Collaborative Video Searching on a Tabletop. **Multimedia Systems Journal**, 12(4-5), 2006.
6. Smeaton A.F, Gurrin C. and **Lee H**. Interactive Searching and Browsing of Video Archives: Using Text and Using Image Matching. Book Chapter in: **Interactive Video: Algorithms and Technologies**, Hammoud, Riad (Ed.), XVI, 250 p. 109 illus., Hardcover, ISBN: 3-540-33214-6, Springer, 2006.
7. Smeaton A.F, **Lee H** and Mc Donald K. Experiences of Creating Four Video Library

Collections with the Físchlár System. **Journal of Digital Libraries**, Special Issue on Digital Libraries as Experienced by the Editors of the Journal, 2004.

8. **Lee H** and Smeaton A.F. Designing the User-Interface for the Físchlár Digital Video Library. **Journal of Digital Information**, 2(4), Special Issue on Interactivity in Digital Libraries, 2002.

Refereed Conference & Workshop Papers

9. Ferguson P, Gurrin C, Lee H, Smeaton A.F, O'Connor N, Choi Y.H and Park H. Enhancing the Functionality of Interactive TV with Content-based Multimedia Analysis. *International Workshop on Content-Based Audio/Video Analysis for Novel TV Services*, in conjunction with the International IEEE Symposium on Multimedia, San Diego, California, 14-16 December, 2009.
10. **Lee H** and Smeaton A.F. Interaction Platform-Oriented Perspective in Designing Novel Applications. *Create 2009 – Creative Inventions and Innovations for Everyday HCI*, London, U.K., 1-2 July 2009.
11. Mohamad Ali N, Smeaton A.F and **Lee H**. Developing, Deploying and Assessing the Usage of a MovieBrowser Among Students of Film Studies. *HCI International 2009 - 13th International Conference on Human-Computer Interaction*, San Diego, CA, 19-24 July 2009.
12. Mc Givney S, Smeaton A.F and **Lee H**. The Effect of Personality on Collaborative Task Performance and Interaction. *4th International Conference on Collaborative Computing: Networking, Applications and Worksharing (CollaborateCom 2008)*, Orlando, FL, U.S.A., 13-16 November 2008.
13. Bredin H, Byrne D, **Lee H**, Noel E. O'Connor and Jones G. Dublin City University at the TRECVID 2008 BBC Rushes Summarisation Task. *TVS 2008 - TRECVID BBC Rushes Summarization Workshop, ACM Multimedia 2008*, Vancouver, Canada, 31 October 2008.
14. Ferguson P, Gurrin C, **Lee H**, Sav S, Foures T, Lacote S, Smeaton A.F and O'Connor N. Experiences and Challenges of Supporting Social Interactive TV. *Workshop on Social Television and Video: Opportunities, Challenges and Future Outlook, at uxTV 2008*, Silicon Valley, CA, USA, 22-24 October 2008.
15. **Lee H**, Gurrin C, Smeaton A.F., O'Connor N and Park H. Balancing the Power of Multimedia Information Retrieval and Usability in Designing Interactive TV. *UXTV 2008 – International Conference on Designing Interactive User Experiences for TV and Video*, Silicon Valley, CA, USA, 22-24 October 2008.
16. Ferguson P, **Lee H**, Gurrin C, Foures T, Lacote S, Smeaton A.F. and O'Connor N. Searching without Text in an Interactive TV Environment. *AIR 2008 – 2nd International Workshop on Adaptive Information Retrieval*, London, U.K., 18 October 2008.
17. **Lee H**, Gurrin C, Ferguson P, Sav S, Foures T, Lacote S, O'Connor N, Smeaton A.F and Park H. Balancing Simplicity and Functionality in Designing User-Interface for an Interactive TV. *EuroITV 2008 - 6th European Interactive TV Conference*, Salzburg, Austria, 3-4 July 2008.
18. Mohamad Ali N, Smeaton A.F., **Lee H** and Brereton P. Implementation of a MovieBrowser Tool in Supporting Movie Content Analysis and Browsing. *2nd Irish Human-Computer Interaction Conference*, Cork, 19-20 September 2008.
19. Byrne D, **Lee H**, Jones G and Smeaton A.F. Guidelines for the Presentation and Visualisation of LifeLog Content. *2nd Irish Human-Computer Interaction Conference*, Cork, 19-20 September 2008.
20. Blighe M, Sav S, **Lee H** and O'Connor N. Mo Músaem Fíorúil: A Web-based Search and Information Service for Museum Visitors. *ICIAR 2008 - International*

Conference on Image Analysis and Recognition, Povoia de Varzim, Portugal, 25-27 June 2008.

21. Heng X, Lao S, **Lee H** and Smeaton A.F. A Touch Interaction Model for Tabletops and PDAs. *PPD 2008 - Workshop on Designing Multi-Touch Interaction Techniques for Coupled Public and Private Displays* (as part of AVI 2008 - International Working Conference on Advanced Visual Interfaces), Naples, Italy, 31 May 2008.
22. Sadlier D, **Lee H**, Gurrin C, Smeaton A.F and O'Connor N. User-Feedback on a Feature-Rich Photo Organiser. *WIAMIS 2008 - 9th International Workshop on Image Analysis for Multimedia Interactive Services*, Klagenfurt, Austria, 7-9 May 2008.
23. O'Connor N, Duffy T, Ferguson P, Gurrin C, **Lee H**, Sadlier D, Smeaton A.F and Zhang K. A Content-based Retrieval System for UAV-like Video and Associated Metadata. *SPIE Defence and Security Conference 2008*, Orlando, FL, 16-20 March 2008.
24. Byrne D, Kehoe P, **Lee H**, O Conaire C, Smeaton A.F, O'Connor N and Jones G. A User-Centered Approach to Rushes Summarisation Via Highlight-Detected Keyframes. *TVS 2007 - TRECVID BBC Rushes Summarization Workshop*, ACM Multimedia 2007, Augsburg, Germany, 24-29 September 2007.
25. **Lee H**, Mc Givney S, Byrne D and Smeaton A.F. Adaptive Information Cluster at Dublin City University. *iHCI 2007 – The 1st Irish Human-Computer Interaction Conference*, Limerick, Ireland, 2 May 2007.
26. O'Hare N, Gurrin C, Jones G, **Lee H**, O'Connor N and Smeaton A.F. Using Text Search for Personal Photo Collections with the MediAssist System. *22nd Annual ACM Symposium on Applied Computing*, Seoul, Korea, 11-15 March 2007.
27. Smeaton A.F, O'Connor N, Jones G, Gaughan G, **Lee H** and Gurrin C. SenseCam Visual Diaries Generating Memories for life. *Memories for Life Colloquium 2006*, British Library Conference Centre, London, U.K., 12 December 2006.
28. O'Hare N, **Lee H**, Cooray S, Gurrin C, Jones G, Malobabic J, O'Connor N, Smeaton A.F and Uscilowski B. Automatic Text Searching for Personal Photos. *SAMT 2006 - Proceedings of The First International Conference on Semantics And Digital Media Technology*, Athens, Greece, 6-8 December 2006.
29. Lehane B, O'Connor N, Smeaton A.F and **Lee H**. A System For Event-Based Film Browsing. *TIDSE 2006 - 3rd International Conference on Technologies for Interactive Digital Storytelling and Entertainment*. Lecture Notes in Computer Science (LNCS) Vol 4326., Darmstadt, Germany, 4-6 December 2006.
30. Foley C, Smeaton A.F and **Lee H**. Synchronous Collaborative Information Retrieval with Relevance Feedback. *CollaborateCom 2006 - 2nd International Conference on Collaborative Computing: Networking, Applications and Worksharing*, Atlanta, Georgia, 17-20 November 2006.
31. **Lee H**, Smeaton A.F, O'Connor N and Jones G. Adaptive Visual Summary of LifeLog Photos for Personal Information Management. *AIR Workshop - 1st International Workshop on Adaptive Information Retrieval*, Glasgow, Scotland, 14 October 2006.
32. Gurrin C, Brenna L, **Lee H**, Zagorodnov D, Smeaton A.F and Jahansen D. Supporting Mobile Access to Digital Video Archives without requiring User Queries. *MobileHCI '06 - 8th International Conference on Human-Computer Interaction with Mobile Devices and Services*, Espoo, Finland, 12-15 September 2006.
33. Lehane B, O'Connor N and **Lee H**. Searching Movies based on User Defined Semantic Events. *SIGMAP 2006 - International Conference on Signal Processing and Multimedia Applications*, Setubal, Portugal, 7-10 August 2006.
34. O'Hare N, **Lee H**, Cooray S, Gurrin C, Jones G, Malobabic J, O'Connor N,

- Smeaton A.F and Uscilowski B. MediAssist: Using Content-Based Analysis and Context to Manage Personal Photo Collections (demo paper). *CIVR 2006 - 5th International Conference on Image and Video Retrieval*, Tempe, AZ, 13-15 July 2006.
35. Sav S, Jones G, **Lee H**, O'Connor N and Smeaton A.F. Interactive Experiments in Object-Based Retrieval. *CIVR 2006 - 5th International Conference on Image and Video Retrieval*, Tempe, AZ, 13-15 July 2006.
 36. O'Connor N., **Lee H.**, Smeaton A.F., Jones G., Cooke E., Le Borgne H. and Gurrin C. Físchlár-TRECVID2004: Combined Text- and Image-Based Searching of Video Archives. *ISCAS 2006 - IEEE International Symposium on Circuits and Systems*, Kos, Greece, 21-24 May 2006.
 37. Sav S., Smeaton A.F., Jones G., **Lee H.** and O'Connor N. Object-Based Access to TV Rushes Video. *ECIR 2006 - European Conference on Information Retrieval*, Imperial College London, U.K., 10-12 April 2006.
 38. Smeaton A.F., **Lee H.**, Foley C., Mc Givney S. and Gurrin C. Físchlár-DiamondTouch: Collaborative Video Searching on a Table. *SPIE Electronic Imaging - Multimedia Content Analysis, Management, and Retrieval*, San Jose, CA, 15-19 January 2006.
 39. Smeaton A.F., Foley C., Gurrin C., **Lee H.** and Mc Givney S. Collaborative Searching for Video Using the Físchlár System and a DiamondTouch Table. *TableTop2006 - The 1st IEEE International Workshop on Horizontal Interactive Human-Computer Systems*, Adelaide, Australia, 5-7 January 2006.
 40. Sav S., **Lee H.**, Smeaton A.F. and O'Connor N. Using Video Objects and Relevance Feedback in Video Retrieval. *SPIE Optics East 2005 - Internet Multimedia Management Systems VI (IT108)*, Boston, MA, USA, 23-26 October 2005.
 41. O'Hare N., Gurrin C., **Lee H.**, Murphy N., Smeaton A.F. and Jones G. Digital Photos: Where and When? *ACM Multimedia 2005 - 13th ACM International Conference on Multimedia 2005 (video paper)*, Singapore, 6-12 November 2005.
 42. Sav S., **Lee H.**, O'Connor N. and Smeaton A.F. Interactive Object-based Retrieval Using Relevance Feedback. *Acivs 2005 - Advanced Concepts for Intelligent Vision Systems*, Antwerp, Belgium, 20-23 September 2005.
 43. Gurrin C., Jones G., **Lee H.**, O'Hare N., Smeaton A.F. and Murphy N. Mobile Access to Personal Digital Photograph Archives. *MobileHCI 05 - 7th International Conference on Human Computer Interaction with Mobile Devices and Services*, Salzburg, Austria, 19-22 September 2005.
 44. Sav S., **Lee H.**, Smeaton A.F. and O'Connor N. Using Segmented Objects in Ostensive Video Shot Retrieval. *AMR 2005 - 3rd International Workshop on Adaptive Multimedia Retrieval*, Glasgow, U.K., 28-29 July 2005.
 45. **Lee H.**, Smeaton A.F., O'Connor N. and Murphy N. User-Interface to a CCTV Video Search System. *ICDP 2005 - IEE International Symposium on Imaging for Crime Detection and Prevention*, London, U.K., 7-8 June 2005.
 46. **Lee H.**, Smeaton A.F. and Smyth B. User Evaluation Outside the Lab: The Trial of Físchlár-News. *CoLIS5 - 5th International Conference on Conceptions of Library and Information Science -Context: Nature, Impact and Role, Workshop on Evaluating User Studies in Information Access*, Glasgow, U.K., 4-8 June 2005.
 47. Gurrin C., **Lee H.** and Smeaton A.F. Físchlár @ TRECVID2003: System Description. *12th ACM International Conference on Multimedia*, October 2004.
 48. Lao S., Smeaton A.F., Jones G. and **Lee H.** A Query Description Model Based on Basic Semantic Unit Composite Petri-Net for Soccer Video. *MIR2004 - 6th ACM SIGMM International Workshop on Multimedia Information Retrieval, ACM Multimedia 2004*, New York, NY, 15-16 October 2004.
 49. Smeaton A.F., Gurrin C., **Lee H.**, Mc Donald K., Murphy N., O'Connor N. and

- Smyth B. The Físchlár-News-Stories System: Personalised Access to an Archive of TV News. *RIAO 2004 - Coupling Approaches, Coupling Media and Coupling Languages for Information Retrieval*, Avignon, France, 26-28 April, 2004.
50. Gurrin C., Browne P., Smeaton A.F., **Lee H.**, Mc Donald K. and MacNeela P. Físchlár-Nursing, Using Digital Video Libraries to Teach Processes to Nursing Students. *WBE 2004 - IASTED International Conference on Web-Based Education*, Innsbruck, Austria, 16-18 February, 2004
 51. Gaughan, G., Smeaton, A.F., Gurrin, C., **Lee, H.** and Mc Donald, K. Design, Implementation and Testing of an Interactive Video Retrieval System. *MIR 2003 - 5th ACM SIGMM International Workshop on Multimedia Information Retrieval*, Berkeley, CA, 7 November 2003.
 52. Gurrin, C., Smeaton, A.F., **Lee, H.**, Mc Donald, K., Murphy, N., O'Connor, N. and Marlow, S. Mobile Access to the Físchlár-News Archive. *Mobile HCI 2003 - 5th International Symposium on Human Computer Interaction with Mobile Devices and Services, Workshop on Mobile and Ubiquitous Information Access*, Udine, Italy, 8-11 September 2003.
 53. Smeaton, A.F., **Lee, H.**, O'Connor, N., Marlow, S. and Murphy, N. TV News Story Segmentation, Personalisation and Recommendation. *AAAI 2003 Spring Symposium on Intelligent Multimedia Knowledge Management*, Palo Alto, CA, 24-26 March 2003.
 54. **Lee, H.** and Smeaton, A.F. Searching the Físchlár-NEWS Archive on a Mobile Device. *Proceedings of the ACM SIGIR 2002 - 25th International ACM Conference on Research and Development in Information Retrieval, Workshop on Mobile Personal Information Retrieval*, Tampere, Finland, 11-15 August 2002.
 55. **Lee, H.**, Smeaton, A., Murphy, N., O'Connor, N., and Marlow, S. Físchlár on a PDA: Handheld User Interface Design to a Video Indexing, Browsing and Playback System. *Proceedings of the 1st International Conference on Universal Access in Human-Computer Interaction (UAHCI 2001)*, New Orleans, LA, 2001.
 56. O'Connor, N., Marlow, S., Murphy, N., Smeaton, A., Browne, P., Deasy, S., **Lee, H.**, and Mc Donald, K. Físchlár: an on-line system for indexing and browsing of broadcast television content. *Proceedings of the 26th International Conference on Acoustics, Speech, and Signal Processing (ICASSP 2001)*, Salt Lake City, UT, 2001.
 57. Smeaton, A., Murphy, N., O'Connor, N., Marlow, S., **Lee, H.**, Mc Donald, K., Browne, P., and Ye, J. The Físchlár Digital Video System: A Digital Library of Broadcast TV Programmes. *Proceedings of the ACM+IEEE Joint Conference on Digital Libraries (JCDL 2001)*, Roanoke, VA, 24-28 June, 2001.
 58. **Lee, H.**, Smeaton, A.F., Murphy, N., O'Connor, N., and Marlow, S. User Interface Design for Keyframe-Based Browsing of Digital Video. *Proceedings of the Workshop on Image Analysis for Multimedia Interactive Services (WIAMIS 2001)*. Tampere, Finland, 16-17 May, 2001.
 59. **Lee, H.**, Smeaton, A., McCann, P., Murphy, N., O'Connor, N., and Marlow, S. Físchlár on a PDA: a handheld user interface to a video indexing, browsing and playback system. *Proceedings of the 6th ERCIM Workshop "User Interfaces for All"*, Florence, Italy, 2000.
 60. **Lee, H.**, Smeaton, A., Berrut, C., Murphy, N., Marlow, N., and O'Connor, N. Implementation and analysis of several keyframe-based browsing interfaces to digital video. *Proceedings of the 4th European Conference on Research and Advanced Technology for Digital Libraries (ECDL 2000)*, Lisbon, Portugal, 2000.
 61. **Lee, H.**, Smeaton, A., O'Toole, C., Murphy, N., Marlow, S., and O'Connor, N. The Físchlár digital video recording, analysis, and browsing system. *RIAO '2000: Content-Based Multimedia Information Access*, Paris, France, 2000.
 62. **Lee, H.**, Smeaton, A., and Furner, J. User-interface issues for browsing digital

video. *Proceedings of the 21st Annual Colloquium on IR Research (IRSG '99)*, Glasgow, U.K., 1999.

Non-Refereed Conference & Workshop Papers, Magazines

- **Lee H** and Smeaton, A.F. Físchlár on a PDA: A Hand-Held User-Interface to Digital Video. *ERCIM News*, No. 46, July 2001.
- Browne, P., Gurrin, C., **Lee, H.**, Mc Donald, K., Sav, S., Smeaton, A.F., and Ye, J. Dublin City University Video Track Experiments for TREC 2001. *Proceedings of the 10th Text REtrieval Conference (TREC)*, Gaithersburg, MD, 13-16 November, 2001.
- Browne, P., Czirjek, C., Gurrin, C., Jarina, R., **Lee, H.**, Mc Donald, K., Smeaton, A.F., and Ye, J. Dublin City University Video Track Experiments for TREC 2002. *Proceedings of the 11th Text REtrieval Conference (TREC)*, Gaithersburg, Maryland, 19-22 November 2002.
- Browne, P., Czirjek, C., Gaughan, G., Gurrin, C., Jones, G., **Lee, H.**, Marlow, S., Mc Donald, K., Murphy, N., O'Connor, N., O'Hare, N., Smeaton, A.F., and Ye, J. Dublin City University Video Track Experiments for TREC 2003. *TRECVID 2003 - Text REtrieval Conference TRECVID Workshop*, Gaithersburg, Maryland, 17-18 November 2003.
- Cooke E., Ferguson P., Gaughan G., Gurrin C., Jones G., Le Borgne H., **Lee H.**, Marlow S., Mc Donald K., McHugh M., Murphy N., O'Connor N., O'Hare N., Rothwell S., Smeaton A.F. and Wilkins P. TRECVID 2004 Experiments in Dublin City University. *TRECVID 2004 - Text REtrieval Conference TRECVID Workshop*, Maryland, 15-16 November 2004.
- Smeaton A.F, O'Connor N and **Lee H.** Físchlár-News: Multimedia Access to Broadcast TV News. *ERCIM News*, No. 62, July 2005.
- Foley C., Gurrin C., Jones G., **Lee H.**, Mc Givney S., O'Connor N., Sav S, Smeaton A.F and Wilkins P. TRECVID 2005 Experiments in Dublin City University. *TRECVID 2005 - Text REtrieval Conference TRECVID Workshop*, Gaithersburg, Maryland, 14-15 November 2005.
- Wilkins P, Adamek T, Byrne D, Jones G, **Lee H**, Keenan G, McGuinness K, O'Connor N, Smeaton A.F, Amin A, Obrenovic Z, Benmokhtar R, Galmar E, Huet B, Essid S, Landais R, Vallet F, Papadopoulos G, Vrochidis S, Mezaris V, Kompatsiaris I, Spyrou E, Avrithis Y, Morzinger R, Schallauer P, Bailer W, Piatrik T, Chandramouli K, Izquierdo E, Haller M, Goldmann L, Samour A, Cobet A, Sikora T and Praks P. K-Space at TRECVID 2007. *TRECVID 2007 - Text REtrieval Conference TRECVID Workshop*, Gaithersburg, Maryland, 5-6 November 2007.
- Wilkins P, Byrne D, Jones G, **Lee H**, Keenan G, McGuinness K, O'Connor N, O'Hare N, Smeaton A.F and Adamek T. K-Space at TRECVID 2008. *Proceedings of the TRECVID 2008*, Gaithersburg, Maryland, 17-18 November 2008.