



Carlo Ratti - Curriculum Vitae et Studiorum

Born 7-1-1971 Turin, Italy

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Present positions

Research Scientist and Director of the SENSEable City Laboratory, Massachusetts Institute of Technology, Department of Urban Studies and Planning and Media Lab, Cambridge, MA, USA

Principal, carlorattiassociati – Chiara Morandini, Walter Nicolino, Carlo Ratti, Turin, Italy

Education

- 2001-02 *Fulbright Senior Scholar at the Massachusetts Institute of Technology, School of Architecture and Planning (Media Lab, Tangible Media Group)*
- 1998-01 *PhD in Architecture, the Martin Centre for Architectural and Urban Studies, University of Cambridge Department of Architecture, Cambridge UK*
- 1995-96 *Master of Philosophy in Environmental Design in Architecture, University of Cambridge*
- 1989-95 *European Double Degree Programme:
M.S. Degree in Civil Engineering with structural option at the Politecnico di Torino, Turin, Italy; Laurea 110/110 cum laude and dignità di stampa
M.S. Degree in Civil Engineering at Ecole Nationale des Ponts et Chaussées, Paris, France; Diplôme d'ingénieur*
- 1988-89 *High school degree at Liceo Scientifico Segrè, Turin, with 60/60 (maximum marks)*

Languages

English: fluent, written and spoken Italian: native
French: fluent, written and spoken German/Spanish: basic knowledge

Professional qualifications

- 1999 *Member of the Italian Institute of Chartered Engineers (Ordine degli Ingegneri di Torino) registration number 7889Y*
- 1998 *Architects Registration Board ARB (United Kingdom) registration number 62794A*
- 1996 *Ingénieur de l'Ecole des Ponts et Chaussées (France)*

Academic experience

- 2004 *Lecturer, Harvard Design School*
- 2005-2005 *Visiting Scholar, Simmons Hall, Massachusetts institute of Technology*
- 2001-05 *Visiting Professor (Einsegnant) at the Ecole Nationale des Ponts et Chaussées and at the Ecole d'Architecture de Marne-la-Vallée in Paris*
- 1997-98 *Lecturer (Professore a contratto) at the Politecnico di Torino, Faculty of Architecture (the 4th year design studios)*
- 1996-97 *Research Assistant, The Martin Centre, University of Cambridge*
- 1994-95 *Teaching Assistant at the Politecnico di Torino, Faculty of Architecture*

Design practice

- 2002- Architectural design work performed with **carlorattiassociati** – Chiara Morandini, Walter Nicolino, a rapidly growing architectural office that was started in the Summer of 2002 in Turin, Italy. Drawing on Carlo's research at the Massachusetts Institute of Technology, the office is currently involved in a number of projects, both domestically and abroad. In 2004 **carlorattiassociati** was selected for exhibition at the Venice Biennale (Italian pavilion) as one of the top emerging Italian practices. Its work has already been widely published in several countries (see publications section on www.carloratti.com).
- 1997 *Principia*, Turin, engineering and architectural design (6 months)
- 1996 Cambridge Architectural Research Limited, environmental design consultancy on the *Saline Ostia Antica* project (2 week project)
- 1993-94 *Giovanni Bo*, Asti, engineering and architectural design (summer 1993 and 1994)

Scientific publications

- Scientific publications; (*) are chapters of books or refereed publications.
- (*) - Ratti C., Berry D., "Sense of the City: Wireless and the Emergence of Real-Time Urban Systems", in: Chatelet V. (editor), *Interactive cities* Editions XYZ (forthcoming)
- (*) - Ratti C., Di Sabatino S., Britter R., 2005, "Texture and the urban wind field", *Theoretical and Applied Climatology* (forthcoming - invited article based on the plenary keynote address delivered at the ICUC 03 conference in Lotz, Poland, September 2003) ISSN 0177798X
- (*) - Berry D., Mattiello A., Morello E., Sevtsuk A., Ratti C., 2005, "MMS_Graz", in: De Michelis M. (editor), *M-Cities* (forthcoming)
- (*) - Raydan D., Ratti C., Steemers K., 2005, "Courtyards: a bioclimatic form?", in *Courtyard Housing*, edited by: Brian Edwards, Magda Sibley, Peter Land, Mohammad Hakmi, Attilio Petruccioli, Spon Press, ISBN 0415262720
- (*) - Ratti C., "Suggestions for developments in space syntax", in Van Nes A. (editor), 2005, "Space Syntax", Delft University Press
- (*) - Ratti C., Pulselli R. M., Williams S., Frenchman D., 2005, "Mobile Landscapes", submitted for publication to *Environment and Planning B – Planning and Design*
- Sevtsuk A., Ratti C., 2005, "iSPOT: describing the use of space on the MIT campus through the analysis of WiFi networks", proceedings of *CUPUM '05: The Ninth International Conference on Computers in Urban Planning and Urban Management*, London, 29 June – 1 July 2005
- (*) - Ratti C., Morello, 2005, SunScapes: extending the 'solar envelopes' concept through 'iso-solar surfaces', long paper submitted to the *International Conference on Passive and Low Energy Architecture PLEA 2005*, November 2005, Beirut, Lebanon
- Morello E., Ratti C., 2005, 21st Century Milan: using new image processing techniques to assess the environmental quality of the Milan Fair masterplan, short paper submitted to the *International Conference on Passive and Low Energy Architecture PLEA 2005*, November 2005, Beirut, Lebanon
- Pulselli R. M., Ratti C., 2005, "Mobile Landscapes", *Equilbri* (Il Mulino), April 2005
- Pulselli R. M., Pulselli F. M., Ratti C., Tiezzi E., 2005, "Dynamics and evolution of urban patterns: the evidence of the Mobile Landscape project", *Ecosud 2005, Fifth International Conference on Ecosystems and Sustainable Development*, 3-5 May 2005, Cadiz, Spain
- Puri Purini N., Boralevi T., Ratti C., 2005, "La città sostenibile", *Aspenia* n. 28
- Pulselli R.M., Pulselli F.M., Ratti C. and Tiezzi E., 2005, "Dissipative structures for understanding cities: resource flows and mobility patterns", *BECON 2005 - Built Environment Complexity Network*, Liverpool, 11-14 September (forthcoming)
- (*) - Pulselli R. M., Ratti C., Tiezzi E., 2005, "Cities out of chaos: evidence from the mobile landscapes project", submitted for publication to the *International Journal of Ecodynamics*

- (*) - Ratti C., 2004, "Urban texture and radiation exchange", submitted for publication to *Solar Energy*
- Ratti C., Mitasova H., 2004, "Tangible GIS: new human-computer interfaces for exploring landscape", *32nd International Geological Congress*, Florence, Italy, 20-28 August 2004, 66-5
- (*) - Ratti C., Baker N., Steemers K., 2004, "Energy consumption and urban texture", submitted for publication in *Energy and Buildings* ISSN 0378-7788
- Goldman J., Ratti C., 2004, "Beijing: the lost city?", *Aspenia* (selected papers from Aspenia translated into English)
- (*) - Ratti C., 2005, "The lineage of the line: space syntax parameters from the analysis of urban DEMs", *Environment and Planning B – Planning and Design*, 32, pp. 547-566, ISSN 02658135
- (*) - Ishii H., Biderman A., Ratti C., 2004, "Continuous Tangible Interfaces: Bringing clay and sand into digital design", *BT Journal*, 22:4 pp. 287-299, ISSN 1358-3948
- (*) - Ratti C., Biderman A., Piper B., Wang Y., Ishii H., 2004, "Phoxel-Space: an Interface for Exploring Volumetric Data with Physical Voxels", *Proceedings of DIS-CHI 2004*, Cambridge, MA, 1-4 August 2004, pp. 289-296
- (*) - Ratti C., Wang Y., Ishii H., Piper B., Frenchman D., 2004, "Tangible User Interfaces (TUIs): a novel paradigm for GIS", *TGIS Transactions in GIS*, 8:4, pp. 487-421, ISSN 1361-1682
- (*) - Ratti C., 2004, "Rejoinder to Hillier and Penn", *Environment and Planning B – Planning and Design*, 31, pp. 513-516, ISSN 02658135
- (*) - Hillier B., Penn A., 2004, Rejoinder to Carlo Ratti, *Environment and Planning B – Planning and Design*, 31, pp. 501-511, ISSN 02658135
- (*) - Ratti C., 2004, "Space Syntax: some inconsistencies", *Environment and Planning B – Planning and Design* (forthcoming), 31, pp. 487-499, ISSN 02658135
- (*) - Ratti C., Richens S., 2004, "Raster analysis of urban texture", *Environment and Planning B – Planning and Design*, 31, pp. 297-309, ISSN 02658135 (the article was awarded the Michael Breheny Prize for the Best Paper in Environment and Planning B in 2004)
- Goldman J., Ratti C., 2004, "Pechino: la città perduta?", *Aspenia*
- Seitinger S., Ratti C., 2004, "Cannes reloaded", *Cluster #2 (special issue on wireless)*, pp. 20-23
- Ratti C., Baker N., 2003, "Urban infoscapes: new tools to inform city design and planning", *ARQ – Architectural Research Quarterly*, vol. 7 no. 1 ISSN 1359-1355
- (*) - Frisa A., Ratti C., 2003, "Progettare la città: come?", in: *Dalla città diffusa alla città diramata*, edited by Angelo Detragiache, Franco Angeli (Milan) ISBN 8846442539
- Ratti C., 2003, "Instant city" (a report on the urban development of Shenzhen, China), *Aspenia* (selected papers from Aspenia translated into English; including articles by Francis Fukuyama, Joseph Stiglitz and Alberto Alesina)
- Ratti C., 2003, "La città istantanea" (Shenzhen, China), *Aspenia* no. 19
- (*) - Ratti C., Di Sabatino S., Britter R., 2002, "Analysis of 3-d urban databases with respect to air pollution dispersion for a number of European and American cities", *Water, Air and Soil Pollution: Focus*, 2:5 (2002) 459-469 ISSN 1567-7230
- (*) - Ratti C., Raydan D., Steemers K., 2002, "Building form and environmental performance: archetypes, analysis and an arid climate", *Energy and Buildings*, 1459 (2002) 1-10 ISSN 0378-7788
- Brown M.J., Burian S.J., Linger S.P., Velugubantla S.P., Ratti C., 2002, "An overview of building morphological characteristics derived from 3D building databases", *Proceedings of the Fourth Symposium on the Urban Environment*, May 2002, Norfolk, Virginia
- Di Sabatino S., Ratti C., Britter R., 2002, "Modelling the urban flow field and pollution dispersion using digital elevation models", *Proceedings of the Fourth Symposium on the Urban Environment*, May 2002, Norfolk, Virginia
- (*) - Piper B., Ratti C., Ishii H., 2002, "Illuminating Clay: A 3-D Tangible Interface for Landscape Analysis", *Proceedings of the Conference on Human Factors in Computing Systems (ACM-CHI 2002)*, Minneapolis, Minnesota, USA, April 2002, ISBN 1 58113 453 3

- Piper B., Ratti C., Ishii H., 2002, "Illuminating Clay: a tangible interface with potential GRASS applications", *Proceedings of the open-source GIS – GRASS users conference*, Trento, Italy, September 2002
- Frisa A., Ratti C., 2001, "Progettare la città: come?", *Proceedings of 'Dalla città diffusa alla città diramata'*, 15-16 November 2001, Turin, Italy
- Brown M., Grimmond S., Ratti C., 2001, "Comparison of Methodologies for Computing Sky View Factor in Urban Environments", *Proceedings of the International Symposium on Environmental Hydraulics*, 5-8 December 2001, Arizona State University, Tempe, Arizona, USA.
- Ratti C., Di Sabatino S., Britter R., Brown M., Caton F., Burian S., 2001, "Analysis of 3-d urban databases with respect to air pollution dispersion for a number of European and American cities", *Proceedings of the 3rd International Conference on Urban Air Quality*, Loutraki, March 2001, Greece
- (*) - Ratti C., Robinson D., Baker N., Steemers K., 2000, "LT Urban: the energy modelling of urban form", in: Steemers K. and Yanna S. (editors), *Architecture City Environment*, Proceedings of the International Conference on Passive and Low Energy Architecture PLEA 2000, July 2000, Cambridge UK, ISBN 1 902916 16 6
- (*) - Baker N., Ratti C., 2000, "Simplified urban climate models from medium-scale morphological parameters", *World Meteorological Organisation WMO/TD no. 1026*, Selected Papers from the International Conference in Urban Climatology, ICUC '99, Sydney, November 1999
- Raydan D., Ratti C., Steemers K., 2000, "Courtyards: a bioclimatic form?", *Proceedings of the Conference on Courtyard Housing in Arab cities: directions for the 21st century*, 11-13 November 2000, Homs, Syria
- Ratti C., Di Sabatino S., Caton F., Britter R., 2000, "Morphological parameters for urban dispersion models", *Proceedings of the Third Symposium on the Urban Environment* (American Meteorological Society), August 2000, Davis, CA
- Ratti C., Caton F., Di Sabatino S., Britter R., 2000, "Morphological parameters for urban dispersion models", in: Steemers K. and Yanna S. (editors), *Architecture City Environment*, Proceedings of the International Conference on Passive and Low Energy Architecture PLEA 2000, July 2000, Cambridge UK (short paper) ISBN 1 902916 16 6
- Stevens Q. and Ratti C., 1999, "Urban Design Project for the town of Kriva Palanka (Republic of Macedonia)", in: Korobar V. (Editor), *Urban Space Design*, Skopje (University SS Cyril and Methodius Press, Skopje), ISBN 9989 9906 3 8
- (*) - Steemers K., Baker M., Dubiel J., Ratti C., 1999, "Urban texture and microclimate studies", in: Sartogo F. (editor), *Saline Ostia Antica*, Firenze (Alinea), ISBN 88 8125 257 0
- Baker N., Ratti C., 1999, "Simplified urban climate models from medium-scale morphological parameters", *Proceedings of the International Conference in Urban Climatology*, ICUC '99, Sydney, November 1999 ISBN 1 86408 543 6
- De Vivo F., Einaudi L., Magliocchetti M., Ratti C., 1999, *Le strutture collegiali in Italia, Inghilterra, Francia e Stati Uniti: analisi comparativa e basi progettuali*, Quaderno n. 2 della Compagnia di Sanpaolo, Turin, June 1999, 175 page published report
- (*) - Ratti C., Richens P., 1999, "Urban texture analysis with image processing techniques", in: Augenbroe G., Eastman C., *Computers in Building: Proceedings of the CAAD Futures '99 Conference*, Atlanta, June 1999, ISBN 0 7923 8536 5
- Steemers K., Ratti C., 1999, "Informing Urban Bioclimatic Design", *Proceedings of the Architecture and Engineering Conference*, European Association for Architectural Education (EAAE), University of Plymouth, February 1999, ISBN 2 930301 00 7
- Steemers K., Ratti C., "Nuovi strumenti per la progettazione bioclimatica urbana", *Housing n. 9*, Etas Libri, Milan, ISBN 88 453 0840 5
- Ratti C., Baker N., "Daylighting e il modello di porosità urbana", *Proceedings of the conference Il Progetto di Architettura – Convegno Internazionale di Studi*, Rome, May 1998
- (*) - Steemers K., Baker N., Crowther D., Dubiel J., Nikolopoulou M., Ratti C., "City texture and microclimate", *Urban Design Studies*, Vol. 3, 1997, p. 25-50, ISSN: 1358 3255 ISBN: 1 870606 05 1
- Steemers K., Baker N., Crowther D., Dubiel J., Nikolopoulou M., Ratti C., *Towards zero emission urban development*, EU Commission Report, Brussels, 1997

Dissertations

- C. Ratti, *Urban analysis for environmental prediction*, PhD thesis, Cambridge, December 2001
- C. Ratti, *Urban analysis for environmental prediction*, MPhil dissertation, Cambridge, August 1996
- C. Ratti, *Proposta progettuale per la ricostruzione del ponte sul Po a Chivasso con adozione di precompressione a cavi esterni*, Turin/Paris, June 1995

Other articles

1997-

Regular contributor of articles on architecture and urban planning to the Italian national newspapers *La Stampa* and *Il Sole-24 Ore* (Sunday cultural supplement); contributor to the design magazines *Domus*, *Abitare*, *Casabella*. Published articles include:

- *Storia di matite trasferelli e modelli 3d*, *Il Sole-24 Ore*, 22 May 2005
- *Brillante destino da dimenticato - Carlo Mollino*, *Il Sole-24 Ore*, 1 May 2005
- *The topography of exchanging ideas*, *Abitare*, April 2005
- *Uffici a forma di wi-fi*, *Il Sole-24 Ore*, 20 February 2005
- *Dal loft al soft: in Italia un'occasione mancata*, *Il Sole-24 Ore*, 5 December 2004
- *Quando il cemento si fa lieve ed elegante*, *La Stampa*, 1 December 2004
- *Il ninfeo dei cellulari*, *Il Sole-24 Ore*, 14 November 2004
- *Dalla stasi ci salva il salotto*, *Il Sole-24 Ore*, 12 September 2004
- *Edilizia tecnologica rigorosamente di legno*, *Il Sole-24 Ore*, 11 July 2004 (with W. Nicolino)
- *Olimpiadi contro la fuga dei cervelli*, *Il Sole-24 Ore*, 1 May 2004 (reply to Valentino Castellani)
- *Al lavoro nell'«ufficio diffuso»*, *La Stampa*, 21 April 2004
- *Acchiappate il creativo Michael*, *Il Sole-24 Ore*, 18 April 2004
- *La città senza fili*, *Tam Tam (Torino Internazionale)* no. 1/2004
- *La forza delle città? E' la fuga dei cervelli*, *La Stampa*, 17 March 2004
- *L'opera è servita. Ghiacciata*, *Il Sole-24 Ore*, 14 March 2004
- *27 febbraio 2007, Torino ancora «on the move»*, *Il Sole-24 Ore*, 22 February 2004 (with V. Kalk)
- *Ritorno alla caverna (digitale)*, *Il Sole-24 Ore*, 18 January 2004
- *Non sparate sull'IIT*, *La Stampa* 2 January 2004
- *Out of the box* (a review of the exhibition on Stirling, Rossi, Price and Matta Clark at the CCA), *Domus* 895, December 2003
- *The great leap forward* (provisional title – the article is a reportage on the recent urban transformations in Beijing), *Domus* 894, November 2003
- *Riformare per peggiorare? Il passaggio alle Regioni delle competenze su appalti e lavori pubblici promette di rendere irreversibile la crisi dell'architettura in Italia*, Editorial article, *Casabella* 714, September 2003
- *Il fantasma della qualità*, *Il Sole-24 Ore*, 31 August 2003
- *Attorno al Palahockey è tutto OK?*, *Il Sole-24 Ore*, 17 August 2003
- *Vedute di un'India museificata*, *Il Sole-24 Ore*, 20 July 2003
- *Sembra una scheda perforata il dormitorio di Steven Holl*, *La Stampa*, 23 June 2003
- *E se tornassimo al pliocene?*, *Il Sole-24 Ore*, 30 March 2003
- *La sottile torre di Libeskind (provisional title)*, *Il Sole-24 Ore*, 2 March 2003
- *MIT's new generation* (the work of Holl, Gehry, Maki, Correa and Roche on the MIT campus), *Domus* 858, April 2003
- *The architecture of economy* (a review of the Shigeru Ban exhibition at Harvard GSD), *Domus* 857, March 2003
- *Shenzhen*, *La Stampa* 30 January 2003
- *Nudi al concorso*, *La Stampa*, 10 January 2003
- *Tra moda e Hi-Tech*, *La Stampa*, 8 January 2003
- *Sopra la fabbrica lo scrigno dei capolavori - Per la nuova pinacoteca un contenitore metallico appoggiato con leggerezza*, *Il Sole-24 Ore*, 15 September 2002
- *Metropoli sempre in gioco*, *Il Sole-24 Ore*, 28 July 2002
- *No, e' la strada migliore*, *Il Sole-24 Ore*, 16 June 2002 (reply to Mario Viano)

- *Olimpiadi piccole piccole*, Il Sole-24 Ore, 2 June 2002
- *Il design della dolce vita - una mostra dedicata al protagonista della rinascita italiana degli anni 50 e 60 (Gio Ponti)*, Il Sole-24 Ore, 12 May 2002
- *Wright - Casa piovosa casa*, La Stampa, 22 April 2002
- *L'architetto seduce - In occasione della grande retrospettiva Jean Nouvel parla della sua opera*, Il Sole-24 Ore, 16 December 2001
- *Nanotubi per costruire grattacieli*, La Stampa, 9 May 2001

- *Foody revolution con gusto - Vanno a ruba i manuali di cucina e si moltiplicano i locali firmati da celebri designer*, Il Sole-24 Ore, 18 Mars 2001
- *Arc-et-Senans - La citta' ideale e' in mezzo alle Saline*, Il Sole-24 Ore, 28 January 2001
- *Architetti? No grazie, ingegneri*, La Stampa, 29 November 2000
- *In cantiere una citta' galleggiante*, La Stampa, 2 August 2000
- *Tecnocrate, poeta e visionario - Buckminster Fuller, inventore della cupola geodetica*, La Stampa, 2 August 2000
- *Ammortizzatori per ponti ballerini - Due simboli del nuovo millennio, ma con problemi di stabilita'*, La Stampa, 5 July 2000
- *Persi nel Pantheon della meccanica*, Il Sole-24 Ore, 7 May 2000
- *Un giro di giostra per il Duemila - La grande attrazione di Londra*, La Stampa, 5 January 2000
- *Da Oporto le opere di Siza, abitante della solitudine - Alla Basilica Palladiana di Vicenza progetti, disegni e modelli del maestro portoghese*, La Stampa, 24 December 1999
- *Citta' 2000, clima d'inferno - Metropoli sempre piu' calde, sporche, sovraffollate*, La Stampa, 1 December 1999
- *Abitaremo dentro un computer ?*, La Stampa, 1 December 1999
- *Antisismica - Nuovi materiali superelastici*, La Stampa, 27 October 1999
- *Il RIBA premia Barcellona / The RIBA gives its prize to Barcelona*, Domus 817 July/August 1999
- *Torino, il ponte della sfida - Si celebra l'opera dell'architetto Mosca*, La Stampa, 21 July 1999
- *L'architetto? Un cuoco che non offende il palato - Intervista con Norman Foster, vincitore del premio Pritzker*, La Stampa, 8 June 1999
- *Reichstag all'insegna dell'ecologia - Il Parlamento tedesco è verde (nell'architettura)*, La Stampa, 5 May 1999
- *Chandigarh, cinquant'anni dopo / Chandigarh, fifty years later*, Domus 814, April 1999 (with A. Frisa)
- *Convegno - Il fossato tra ingegneri e architetti*, La Stampa, 10 February 1999
- *Citta' di Le Corbusier o di Utopia - Chandigarh, in India, a cinquant'anni dal progetto*, La Stampa, 3 February 1999
- *Telelavoro - E' gia' nata la City of Bits*, La Stampa, 13 January 1999
- *Supergrattacielo, ma bucato - Alto 460 metri puo' accogliere 20000 persone*, La Stampa, 25 November 1998
- *Ingegnere, mi faccia una bolla di sapone - Millennium Dome a Greenwich: il segreto strutturale della cupola più grande del mondo*, La Stampa, 15 July 1998
- *Vieni a sederti in bocca a Mae*, La Stampa, 26 May 1997

Articles on our work

Some of the design and academic work reviewed above was featured in magazines and newspapers such as *Domus*, *Abitare*, *Casabella*, *Space*, *ID Magazine*, *the Boston Globe*, *Toronto Star*, *Der Spiegel*, *Repubblica*, *La Stampa*. For more information see 'publications' section on the website www.carloratti.com

Patents

- *Docket No. D-22; M.I.T. ID: 10275T;*

This application is a Non-Provisional of U.S. Patent Application Serial No. 60/463,273 filed 4/16/2003 and Provisional U.S. Patent Application Serial No. 60/463,357 filed 4/17/2003;

Title: "Methods and apparatus for visualizing volumetric data by projecting an image representing data at a surface -volume intersection onto a deformable physical object that defines the geometry of the surface";

Inventors: Carlo Ratti; Ben Piper; Yao Wang; Hiroshii Ishii

Assignee: Massachusetts Institute of Technology ;

- *Docket No. D-20; M.I.T. ID: 9771T;*

This application is a Non-Provisional of U.S. Patent Application Serial No. 60/463,273 filed 4/16/2003;

Title: "A three dimensional tangible interface for interacting with spatial-temporal data using a laser scanner";

Inventors: Ben Piper; Carlo Ratti; Hiroshii Ishii

Assignee: Massachusetts Institute of Technology

- *Docket No. D-21; M.I.T. ID: 10274T;*

This application is a Non-Provisional of U.S. Patent Application Serial No. 60/463,357 filed 4/17/2003;

Title: "A three dimensional tangible interface for interacting with spatial-temporal data using infrared light sources and infrared detectors";

Inventors: Yao Wang; Assaf Biderman; Carlo Ratti; Ben Piper; Hiroshii Ishii

Assignee: Massachusetts Institute of Technology

- *M.I.T. ID: 11313;*

Provisional Patent Filed with USPTO – United States Patent and Trademark Office on 10/8/2004;

Title: "Programmable window: a large-scale transparent electronic display"

Inventors: Carlo Ratti, Martin Ramos

Assignee: Massachusetts Institute of Technology

Contributions and keynote papers

Unpublished contributions and keynote papers were delivered at the following conferences and symposia:

- 2005 - Invited panel on 'Cities and Information', Social Informatics Fair, Kyoto, 12-14 September 2005
- 2005 - Plenary presentation at the *Fifth International Space Syntax Symposium*, Delft, 13-17 June 2005
- 2003 - Invited plenary presentation at the *International Conference in Urban Climatology (ICUC-5)*, Lotz, Poland, 1-5 September 2003
- 1999 - Invited talk at the National conference on the perspectives of the collegiate system in the Italian university: *I collegi universitari: verso strutture di eccellenza ?* Turin, 22 June 1999
- 1998 - *Collegi universitari e formazione d'eccellenza*, national conference on the perspectives of the collegiate system in the Italian university (co-chairs: Prof. Umberto Eco and Prof. Roberto Schmid, Chancellor of the University of Pavia), Pavia 7 March 1998

Scholarships, prizes, etc.

- 2005 Michael Breheny Prize for the Best Paper in Environment and Planning B in 2004 (with Paul Richens; paper "Raster analysis of urban texture", *Environment and Planning B – Planning and Design*, 31, pp. 297-309)
- 2005 Marquis *Who's Who in America*
- 1999- Junior Fellow of the Aspen Institute; Aspen Institute Italia program for the New Leadership
- 2002 Co-inventor of *Illuminating Clay* (with Ben Piper and Hiroshi Ishii, Tangible Media Group, MIT Media Lab), a 3D tangible interface for computer input-output;
- 2002 Co-inventor of *Sandscape* (with Yao Wang, Assaf Biderman, Ben Piper, and Hiroshi Ishii, Tangible Media Group, MIT Media Lab), a tangible interface presented at the *Ars Electronica 2002* exhibition in Lintz, Austria; bronze prize in the I.D. Magazine Interactive Media Design Competition
- 2001-02 *Fulbright Senior Scholar* at the Massachusetts Institute of Technology
- 1999 Grant from the Italian National Research Council (CNR) for postgraduate research at the University of Cambridge (February to July 2000)
- 1999 Prize in the European architectural competition 'Designing Crafts Europe' (jury chaired by Paolo Portoghesi); a prototype of the chair design was included in an exhibition which Toured Europe and America
- 1998- Research scholarship from the Department of Architecture, University of Cambridge
- 1998 Allen Meek and Reed scholarship from the University of Cambridge
- 1997 First Prize for the UK and Ireland in the architectural students competition 'Solar Building', organised by the European Union (jury chaired by Thomas Herzog)
- 1996 Prize *Optime*, given by the Turin Industrial Union on the basis of academic results
- 1995-96 Italian national scholarship for postgraduate studies in a foreign country, granted by the *Politecnico di Torino*
- 1992-93 Erasmus scholarship for studies at the *Ecole Nationale des Ponts et Chaussées*

Other activities

- 2005 Founder of the *Comitato Valdo Fusi*, Turin, Italy: www.valdofusi.it
- 1999- Referee for the journal *Environment and Planning B – Planning and Design*
- 1997- Leader of the '*Progetto Collegium*', initiated in November 1997 by a group of Italian PhD students in Cambridge (Filippo de Vivo, Luca Einaudi, Manuela Magliocchetti, Carlo Ratti). The project suggested a possible reform of university education in Italy and gained support from distinguished intellectuals and politicians including Umberto Eco, Carlo Ginzburg, Carlo Scognamiglio (former President of the Parliament), Giuliano Amato (former Prime Minister). Action was taken in Milan and led to the constitution of the Collegio di Milano (www.collegiodimilano.it). The project was reviewed in over twenty articles in the national and international press and described as a 'significant revolution' of the university in Italy (cf. URL: <http://web.media.mit.edu/~ratti/collegium>). Two reference books on the project are listed below:
- 1999 - U. Eco, *Ornitorinchi laureati*; in R. Chiaberge (editor), *Navigatori del sapere*, Raffaello Cortina Editore, Milan 1999
- 1999 - F. De Vivo, L. Einaudi, M. Magliocchetti and C. Ratti, *Le strutture collegiali in Italia, Inghilterra, Francia e Stati Uniti: analisi comparativa e basi progettuali*, Quaderno n. 2 della Compagnia di Sanpaolo, Turin, June 1999, 175 pages