CURRICULUM VITAE

Riccardo Lattanzi

Ph.D. candidate, Harvard-MIT Division of Health Sciences and Technology

CONTACT INFORMATION

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EDUCATION

2003-present	Ph. D. candidate in Medical Engineering and Medical Physics, Harvard University and Massachusetts Institute of Technology (Cambridge, MA, USA). Division of Health Sciences and Technology (HST).

- Engineering courses at M.I.T.
- Clinical curriculum at Harvard Medical School
- Courses taken at the M.I.T. Sloan School of Management

2006	M. S. in Electrical Engineering and Computer Science, Massachusetts Institute of Technology (Cambridge, MA, USA). Department of Electrical Engineering and Computer Science (EECS).
2000	"Laurea" in Electronic Engineering, University of Bologna (Bologna, Italy). Department of Electronics, Computer Sciences and Systems (DEIS).
Other	1994 - Liceo Scientifico *Temistocle Calzecchi Onesti* (Fermo, Italy): "Maturità Scientifica". 1993 - Enid High School (Enid, Oklahoma, USA): graduation.

RESEARCH EXPERIENCE

01/2004-present	Beth Israel Deaconess Medical Center (Boston, USA). Research assistant in the radiology department. Supervisor: Prof. Daniel K. Sodickson, MD, PhD

- Magnetic Resonance Imaging reconstruction algorithms.
- Electrodynamic simulations in parallel MR imaging and parallel MR excitation.
- Coil design optimization.

| 01/2001-05/2003 | Rizzoli Orthopaedic Institutes (Bologna, Italy). Research scientist at the Laboratory of Medical Technology. Supervisor: Dr. Marco Viceconti, PhD. |

- Co-developer of a C++ based multimodal user-interface for a surgical simulator.
- In charge of technical and clinical validation of the developed software.
- In charge of industrial relations after the commercialization of the system.
- Collaborator on two European research grants.

| 09/2002-03/2003 | Carnegie Mellon University (Pittsburgh, USA). Fulbright research scholar at the Medical Robotics and Computer Assisted Surgery (MRCAS) laboratory. Supervisors: Dr. Branislav Jaramaz, PhD and Dr. Anthony DiGioia, MD. |

- Research scientist in Medical Robotics and Computer Assisted Surgery.
- Validation of an image-based surgical navigation system for orthopedic surgery.

| 01/2000-12/2000 | Rizzoli Orthopaedic Institutes (Bologna, Italy). Visiting research student. Carrying out the research work for "Tesi di Laurea" (Master Thesis). Thesis title: Evaluation of the effectiveness and the usability of a multimodal user-interface for a surgical simulator for orthopaedic surgery. Supervisors: Prof. Angelo Cappello, PhD and Dr. Marco Viceconti, PhD. |

SKILLS

Programming	Pascal, HTML, Latex, Tcl, C, C++
Operating systems	Mac OS-X, Windows, Linux
Softwares	MS Office, Matlab, Mathematica, VTK
Languages	Italian (native), English (fluent), Spanish (good).

AWARDS AND HONORS

2006 – Sigma Xi scientific research honor society.

2006 – ISMRM student stipend award.

2003 – Harvard-MIT division of Health, Sciences and Technology fellowship.

2002 - Fulbright research scholarship.

2001 - Spinner research scholarship (sponsored by the European Social Fund).

2001 - First prize on abstract competition at BIONOVA 2001 (2nd conference on biotechnologies and bioengineering. 28 November-1 December 2001, Padova, Italy).

RESEARCH GRANTS

MULTIMOD Project (Simulation of multiple medical-imaging modalities: a new paradigm for virtual representation of musculo-skeletal structures). European Commission, contract IST-2000-28377. 2001-2004, collaborator.

JPD Project (Development of a specialised software environment for the design of a standard total hip replacement). European Commission, contract IST-1999-20343. 2001-2002, collaborator.

AFFILIATIONS AND MISCELLANEOUS

Student member of:

- IEEE Engineering in Medicine and Biology Society (EMBS)
- Massachusetts Medical Society (MMS)
- International Society of Magnetic Resonance in Medicine (ISMRM)

2005-present: President of MITALY, the Italian students association at MIT.

2004-present: New England representative for the project "Italian Scientific, Technological and Academic Community in USA" of the Italian Embassy in USA.

2003-present: player for the European club basketball team in the MIT intramural tournament.

2001: Habilitation to the engineering profession in Italy.

(2000-2003) Editor for "L'Isola del Tesoro". (Italian on-line magazine of Cinema and Literature).

PUBLICATIONS IN PEER REVIEWED JOURNALS

Testi D, **Lattanzi R**, Benvegnu M, Petrone M, Zannoni C, Viceconti M and Toni A, *Efficacy of stereoscopic visualisation and six degrees of freedom interaction in preoperative planning of total hip replacement*; Medical Informatics and the Internet in Medicine, vol. 31(3), 2006, p. 205-218.

Lattanzi R, Baruffaldi F, Viceconti M and Zannoni C, *Specialised CT scan protocols for 3D preoperative planning of total hip replacement*; Medical Engineering & Physics, vol. 26(3), 2004, p. 237-245.

Lattanzi R, Grazi E, Testi D, Viceconti M, Cappello A and Toni A, *Accuracy and repeatability of cementless total hip replacement surgery in patients with deformed anatomies*; Medical Informatics and the Internet in Medicine, vol. 28(1), 2003, p. 59-71.

Viceconti M, **Lattanzi R**, Antonietti B, Paderni S, Olmi R, Sudanese A and Toni A, *CT-based surgical planning software improves the accuracy of THR preoperative planning*; Medical Engineering & Physics, vol. 25(5), 2003, p. 371-377.

Lattanzi R, Viceconti M, Zannoni C, Quadrani P and Toni A, *Hip-Op: an innovative software to plan total hip replacement surgery*; Medical Informatics and the Internet in Medicine, vol. 27(2), 2002, p. 71-83.

Viceconti M, **Lattanzi R**, Zannoni C and Cappello A, *Effect of the display modality on the spatial accuracy of orthopaedic surgery preoperative planning applications*; Medical Informatics and the Internet in Medicine, vol. 27(1), 2002, p. 21-32.

PUBLICATIONS IN CONFERENCE AND WORKSHOP PROCEEDINGS

Lattanzi R, Grant AK, Sodickson DK and Zhu Y, *Electrodynamic constraints on minimum SAR in parallel excitation*; proceedings of the the 15th Scientific Meeting of the International Society for Magnetic Resonance in Medicine (ISMRM). Berlin, GE, 19-25 May 2007, p. 675.

Lin FH, **Lattanzi R**, Grant AK and Sodickson DK, *Ultimate intrinsic SNR of regularized parallel imaging and inverse imaging*; proceedings of the the 15th Scientific Meeting of the International Society for Magnetic Resonance in Medicine (ISMRM). Berlin, GE, 19-25 May 2007, p. 3346.

Robson PM, Grant AK, Madhuranthakam AJ, **Lattanzi R**, Sodickson DK and McKenzie CA, *Universal approach to quantification of SNR and g-factor for parallel MRI*; proceedings of the the 15th Scientific Meeting of the International Society for Magnetic Resonance in Medicine (ISMRM). Berlin, GE, 19-25 May 2007, p. 1747.

Lattanzi R, Grant AK, Sodickson DK and Zhu Y, *Electrodynamic analysis of minimum RF power deposition in parallel excitation*; proceedings of the ISMRM Workshop on Advances in High Field MR. Pacific Grove, CA, 25-28 March 2007.

Lattanzi R, Grant AK, Ohliger MA and Sodickson DK, *Measuring practical coil array performance with respect to ultimate intrinsic SNR: a tool for array design and assessment*; proceedings of the 14th Scientific Meeting of the International Society for Magnetic Resonance in Medicine (ISMRM). Seattle, WA, 6-12 May 2006, p. 424.

Jaramaz B, Nikou C, **Lattanzi R** and DiGioia AM, *Accuracy requirements in THR surgical navigation: effect of cup alignment error*; proceedings of the 3rd Annual Conference of the International Society of Computer Assisted Orthopaedic Surgery (CAOS). Marbella, Spain, 18-21 June 2003.

Eckman K, Nikou C, **Lattanzi R**, Jaramaz B and DiGioia AM, *Experimental validation of hip range of motion simulator*; proceedings of the 3rd Annual Conference of the International Society of Computer Assisted Orthopaedic Surgery (CAOS). Marbella, Spain, 18-21 June 2003.

Viceconti M, Zannoni C, **Lattanzi R** and Petrone M, *Efficacy of fully 3D monomodal interface in pre-operative planning of total hip replacement*; proceedings of the 17th International Conference of Computer Assisted Surgery and Radiology (CARS). London, UK, 25-28 June 2003, p. 648-653.

Lattanzi R, Petrone M, Quadrani P, Zannoni C and Viceconti M, *Applications of 3D medical imaging in orthopaedic surgery: introducing the Hip-op system*; proceedings of the First International Symphosium on 3D Data Processing Visualization and Transmission (3DPVT2002), Padova, 19-21 June 2002, p. 808-811.

Lattanzi R, Viceconti M, Quadrani P and Toni A, *The Hip-Op surgical planning system*; poster presentation at the BIONET Event "Biomechanics in the decade of bone & joints", Brussels 27-29 April 2002.

Lattanzi R, Testi D, Quadrani P, Zannoni C and Toni A, *The Hip-Op surgical system: validation and early clinical experience*; 5th International Symphosium on Computer Methods in Biomechanics and Biomedical Engineering (CMBBE), Rome, 31 October – 3 November 2001.

Zannoni C, Quadrani P, **Lattanzi R** and Viceconti M, *Evaluation of the effectiveness of 2D and 3D interfaces in Computer Assisted Orthopaedic Surgery*; proceedings of 2nd DIRECT European Workshop on High Performance Graphics System and Applications, Bologna, 16-17 October 2000, p. 79-80.

OTHER PUBLICATIONS

Riccardo Lattanzi, *I neuroni e anche i pensieri nessuno sa indagarli così*; La Stampa, suppl. settimanale Tutto Scienze, 7 March 2007.

Riccardo Lattanzi, *Cervelli in fuga? Sbagliato*; La Stampa, suppl. settimanale Tutto Scienze, 24 January 2007.

INVITED SEMINARS

Lattanzi R, *The Hip-Op surgical system: a CT-based software to plan total hip replacement surgery*; The Maurice E. Muller Institute for Biomechanics, University of Bern, Switzerland, 25 April 2002. Host: Frank Langlotz, Ph.D.

Cambridge, 4th June 2007

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