

# Guy Shechter, PhD

## *Curriculum Vitae*

Briarcliff Manor, NY 10510 USA

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### Professional Experience

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- Jan 2007 – **Senior Manager, Image Guided Therapy Technologies**  
Philips Medical Systems  
Briarcliff Manor, NY, USA
- Dec 2004 – **Senior Member Research Staff**  
Apr 2007 Philips Research  
Briarcliff Manor, NY, USA
- Jan 2004 – **Postdoctoral Fellow**  
Dec 2004 Faculty of Medicine, Technion - Israel Institute of Technology  
Haifa, Israel
- Jul 2000 – **Predoctoral IRTA Fellow**  
Dec 2003 NHLBI, National Institutes of Health, DHHS  
Bethesda, MD, USA
- May 2001 – **Research Engineer**  
Jan 2002 Institut National de Recherche en Informatique et en Automatique (INRIA)  
Sophia Antipolis, France

### Education

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- Nov 2003 **Doctor of Philosophy**  
Johns Hopkins University, School of Medicine  
Baltimore, MD  
Dissertation: *“Respiratory motion of the heart: Implications for magnetic resonance coronary angiography”*  
[Abstract](#) appears in *Medical Physics* **31**(6):1647, June 2004.  
Advisor: Elliot R. McVEIGH.
- May 1996 **Bachelor of Science in Biomedical Engineering**  
**Bachelor of Arts in Computer Science**  
Johns Hopkins University, G.W.C. Whiting School of Engineering  
Baltimore, MD  
Research: *Computer aided navigation through parameter space: a case study using the incremental model for calcium release by the IP3 receptor.*

## Awards and Honors

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- 2005 **Philips**, Management Award for best presentation at Corporate Research Exhibition.  
2004 **SPIE Medical Imaging**, Michael B. Merickel Best Student Paper Award, 2nd place.  
2004 **Johns Hopkins – Technion Program for Medical Sciences and Biomedical Engineering**, Postdoctoral Fellowship.  
2004 **Israel Council for Higher Education**, Postdoctoral Fellowship.  
2003 **National Institutes of Health**, Fellows Award for Research Excellence.  
2000–03 **National Institutes of Health**, Predoctoral Intramural Research Training Award.  
1999 **International Society for Magnetic Resonance in Medicine**, Student stipend.  
1997–00 **Whitaker Foundation**, Graduate Fellow.  
1997 **Howard Hughes Medical Institute**, Predoctoral Fellowship, honorable mention.  
1996 **Johns Hopkins University**,  
– Biomedical Engineering, Undergraduate Research Award.  
– Computer Science, Outstanding Double Major Award.  
1995–96 **Johns Hopkins University**, Member of ACM programming team.  
1995 **Johns Hopkins University**, Provost’s Undergraduate Research Award.  
1993 **Radio Club of America**, Scholar.

## Professional Activities

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- 2007- **Program committee**  
SPIE Medical Imaging, Visualization and Image-Guided Procedures  
2002- **Ad hoc reviewer**  
*IEEE Transactions on Medical Imaging*  
*Medical Physics*  
*Image and Vision Computing*

## Invited Presentations

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- Apr 2007 Navigation for image guided therapy.  
*DoVo Seminar, Philips Corporate Research. Eindhoven, The Netherlands.*  
Feb 2004 Free breathing respiratory motion of the heart measured from x-ray angiograms.  
*Siemens Corporate Research. Princeton, NJ, USA.*  
Jun 2002 3D+t modeling of the coronary arteries.  
*Immersion Medical. Gaithersburg, MD, USA.*

## Skills

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- Computer** Programming: C/C++, MATLAB, L<sup>A</sup>T<sub>E</sub>X, Shell scripts, RCS/CVS/SVN.  
Systems: Unix, Mac OS X, Windows XP.  
Libraries: OpenGL, VTK, ITK, X11/Motif, Qt.  
**Languages** Fluent English and Hebrew. Basic French.

## Publications

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### Peer Reviewed Journal Articles

1. G. SHECHTER, J.R. RESAR, and E.R. MCVEIGH. Displacement and velocity of the coronary arteries: Cardiac and respiratory motion, *IEEE Trans. Medical Imaging*, **25**(3):369-375, Mar 2006.
2. G. SHECHTER, B. SHECHTER, J.R. RESAR, and R. BEYAR. Prospective motion correction of x-ray images for coronary interventions, *IEEE Trans. Medical Imaging*, Special Issue on Vascular Imaging, **24**(4):441-450, Apr 2005.
3. G. SHECHTER, J.R. RESAR, and E.R. MCVEIGH. Rest period duration of the coronary arteries: Implications for magnetic resonance coronary angiography, *Medical Physics*, **32**(1):255-262, Jan 2005.
4. A.M. WILLIAMS, M. SOLAIYAPPAN, H.K. PANNU, D. BLUEMKE, G. SHECHTER, and J.P. GEARHART. 3-Dimensional magnetic resonance imaging modeling of the pelvic floor musculature in classic bladder exstrophy before pelvic osteotomy, *J Urology*, **172**(4):1702-1705, Oct 2004.
5. G. SHECHTER, C. OZTURK, J.R. RESAR, and E.R. MCVEIGH. Respiratory motion of the heart from free breathing coronary angiograms, *IEEE Trans. Medical Imaging*, **23**(8):1046-1056, Aug 2004.
6. G. SHECHTER, F. DEVERNAY, E. COSTE-MANIÈRE, A. QUYYUMI, and E.R. MCVEIGH. Three-dimensional motion tracking of coronary arteries in biplane cineangiograms, *IEEE Trans. Medical Imaging*, **22**(4):493-503, Apr 2003.

### Conference Abstracts and Papers

1. R. MANZKE, F.T. TOURNOUX, H.B. VAN DEN BRINK, O. GERARD, W.H.G.M. VAN DEN BOOMEN, G. SHECHTER, L. GUTIERREZ, R. CHAN, J. SINGH, and M.H. PICARD. Interventional guidance for cardiac resynchronization therapies: Merging anatomic X-ray imaging with functional ultrasound imaging based on mutually shared landmarks, in *Proc. Computer Assisted Radiology and Surgery*, Berlin, Germany, Jun 2007.
2. L.F. GUTIERREZ, G. SHECHTER, D. STANTON, S. DALAL, D. ELGORT, R.M. MANZKE, R. CHAN, and L. ZAGORCHEV. Multimodality image guidance system integrating X-ray fluoroscopy and ultrasound image streams with electromagnetic tracking, in *Proc. SPIE Medical Imaging*, San Diego, CA, Feb 2007.
3. E.B. SHEN, G. SHECHTER, J. KRUECKER, and D. STANTON. Quantification of AC electromagnetic tracking system accuracy in a CT scanner environment, in *Proc. SPIE Medical Imaging*, San Diego, CA, Feb 2007.
4. E. WILSON, Z. YANIV, H. ZHANG, C. NAFIS, E. SHEN, G. SHECHTER, A.D. WILES, T. PETERS, D. LINDISCH, and K. CLEARY. A hardware and software protocol for the evaluation of electromagnetic tracker accuracy in the clinical environment: a multi-center study, in *Proc. SPIE Medical Imaging*, San Diego, CA, Feb 2007.

5. Q. DUAN, G. SHECHTER, L.F. GUTIERREZ, D. STANTON, L. ZAGORCHEV, A. LAINE, and D. ELGORT. Augmenting CT cardiac roadmaps with segmented streaming ultrasound, in *Proc. SPIE Medical Imaging*, San Diego, CA, Feb 2007.
6. G. SHECHTER, E.B. SHEN, and D. STANTON. Measuring and modeling metal artifacts of a CT table on AC electromagnetic tracking system accuracy, in *Proc. Computer Assisted Radiology and Surgery*, Osaka, Japan, Jun 2006.
7. R.M. MANZKE, R. CHAN, G. SHECHTER, S. SOKKA, Z.J. MALCHANO, V. REDDY, and V. RASCHE. X-ray fluoroscopy, rotational X-ray imaging and real-time catheter tracking for improved navigation in interventional cardiac electrophysiology procedures, in *Proc. SPIE Medical Imaging*, San Diego, CA, Feb 2006.
8. G. SHECHTER, J.R. RESAR, and E.R. MCVEIGH. MR coronary angiography: Know thy rest periods, in *Proc. 13th Scientific Meeting of the International Society for Magnetic Resonance in Medicine*, Miami, FL, May 2005.
9. D. YERUSHALMI, O. FARIS, F. EVANS, A. DICK, G. SHECHTER, and E.R. MCVEIGH. 3D registration of endocardial basket electrodes with epicardial sock electrodes using multiple x-ray views, in *Proc. 30th Annual Conference of the International Society for Computerized Electrocardiology*, Kauai, HI, Apr 2005.
10. L.F. GUTIERREZ, G. SHECHTER, R.J. LEDERMAN, E.R. MCVEIGH, and C. OZTURK. Distortion correction, calibration, and registration: Towards an integrated MR and x-ray interventional suite, in *Proc. SPIE Medical Imaging*, San Diego, CA, Feb 2005.
11. G. SHECHTER, B. SHECHTER, J.R. RESAR, and R. BEYAR. Prospective motion correction of x-ray images for coronary interventions, in *Proc. 6th International Meeting on Interventional Cardiology: Frontiers in Interventional Cardiology*, Tel Aviv, Israel, Dec 2004.
12. L.F. GUTIERREZ, G. SHECHTER, R.J. LEDERMAN, E.R. MCVEIGH, and C. OZTURK. Fiducial based registration of MR and x-ray images for MRI-guided catheter interventions, in *Fifth Interventional MRI Symposium*, Cambridge, MA, Oct 2004.
13. L.F. GUTIERREZ, and G. SHECHTER. Six degrees of Nobility in *Proc. Annual Meeting of the Biomedical Engineering Society*, Philadelphia, PA, Oct 2004.
14. G. SHECHTER, J.R. RESAR, and E.R. MCVEIGH. Translational motion correction nearly doubles the rest period of the coronary arteries during tidal breathing, in *Proc. 12th Scientific Meeting of the International Society for Magnetic Resonance in Medicine*, Kyoto, Japan, May 2004.
15. G. SHECHTER, C. OZTURK, J.R. RESAR, and E.R. MCVEIGH. Respiratory motion of the heart: Translation, rigid body, affine, or more? in *Proc. 7th Annual Meeting of the Society for Cardiovascular Magnetic Resonance*, Barcelona, Spain, Feb 2004.
16. G. SHECHTER, C. OZTURK, J.R. RESAR, and E.R. MCVEIGH. Free breathing respiratory motion of the heart measured from x-ray coronary angiograms, in *Proc. SPIE Medical Imaging*, San Diego, CA, Feb 2004.
17. G. SHECHTER and E.R. MCVEIGH. MR motion correction of 3D affine deformations, in *Proc. 11th Scientific Meeting of the International Society for Magnetic Resonance in Medicine*, Toronto, ON, July 2003.

18. G. SHECHTER and E.R. MCVEIGH. Computer models of vascular trees from biplane angiograms, in *Proc. 28th Annual Scientific Meeting of the Society for Interventional Radiology*, Salt Lake City, UT, Mar 2003.
19. R.B. THOMPSON, V.K. RAMAN, A.J. DICK, G. SHECHTER, R.S. BALABAN, and E.R. MCVEIGH. Measurement of skeletal muscle perfusion in normal volunteers during reactive hyperemia: Validation of Gadolinium enhanced method using arterial blood flow techniques, in *Proc. 6th Annual Meeting of the Society for Cardiovascular Magnetic Resonance*, Lake Buena Vista, FL, p. 298, Feb 2003.
20. G. SHECHTER, F. DEVERNAY, E. COSTE-MANIÈRE, and E.R. MCVEIGH. Temporal tracking of 3D coronary arteries in projection angiograms, in *Proc. SPIE Medical Imaging*, San Diego, CA, vol. 4064, pp. 612-623, Feb 2002.
21. M. STONE, D. DICK, A.S. DOUGLAS, G. SHECHTER, C. OZTURK, and M.GUTTMAN. Extracting tongue muscle contraction patterns from tagged MRI, in *Proc. 141st Scientific Meeting of the Acoustical Society of America*, Chicago, IL, Jun 2001.
22. J.M. DECLERCK, C. OZTURK, L.F. GUTIERREZ, G. SHECHTER, and E.R. MCVEIGH. Combined analysis of ventricular and atrial motion using MRI, in *Proc. 9th Scientific Meeting of the International Society for Magnetic Resonance in Medicine*, Glasgow, United Kingdom, Apr 2001.
23. H.K. HUSZAR, C. OZTURK, G. SHECHTER, H. HALPERIN, and A.C. LARDO. Three dimensional tracking of chest wall deformation during cardiopulmonary resuscitation using tagged MRI, in *Proc. 9th Scientific Meeting of the International Society for Magnetic Resonance in Medicine*, Glasgow, United Kingdom, Apr 2001.
24. C. OZTURK, G. SHECHTER, and E.R. MCVEIGH. Analysis of paced canine atrial motion using MRI, in *Proc. World Congress on Medical Physics and Biomedical Engineering*, Chicago, IL, Jul 2000.
25. I. SIMON, M. SOLAIYAPPAN, A.M. WILLIAMS, G. SHECHTER, P. LANDIS, J.E. METTER, and A.W. PARTIN. Age-related changes in prostate shape and orientation are related to lower urinary tract symptoms, in *Proc. 95th Annual Meeting of the American Urological Association*, Atlanta, GA, Apr 2000.
26. G. SHECHTER and E.R. MCVEIGH. Automatic registration of precomputed anatomical templates for rapid 3D segmentation, in *Proc. 8th Scientific Meeting of the International Society for Magnetic Resonance in Medicine*, Denver, CO, Apr 2000.
27. C. OZTURK, L.F. GUTIERREZ, J.M. DECLERCK. G. SHECHTER, and E.R. MCVEIGH, Analysis of atrial motion using magnetic resonance imaging, in *Proc. 49th Annual Scientific Session of the American College of Cardiology*, Anaheim, CA, Mar 2000.
28. G. SHECHTER, C. OZTURK, and E.R. MCVEIGH. Interactive four-dimensional segmentation of multiple image sets, in *Proc. SPIE Medical Imaging*, San Diego, CA, vol. 3976, pp. 165-173, Feb 2000.
29. G. SHECHTER, J.M. DECLERCK, C. OZTURK, and E.R. MCVEIGH. Fast template based segmentation of cine cardiac MR, in *Proc. 7th Scientific Meeting of the International Society for Magnetic Resonance in Medicine*, Philadelphia, PA, May 1999.