

Taly Gilat Schmidt

CONTACT INFORMATION

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Marquette University
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EDUCATION

Stanford University, Stanford, California

Ph.D., Electrical Engineering

September 2005

Dissertation Topic: "An Inverse-Geometry Volumetric CT System"

Advisor: Norbert J. Pelc, Sc.D.

M.S., Electrical Engineering

June 2002

University of Illinois at Urbana Champaign, Champaign, Illinois

B.S., Electrical Engineering

May 1998

PROFESSIONAL EXPERIENCE

Marquette University, Milwaukee, Wisconsin

Jan 2006 - present

Assistant Professor, Department of Biomedical Engineering

Medical College of Wisconsin, Milwaukee, Wisconsin

Mar 2006 - present

Adjunct Assistant Professor, Department of Radiology

Stanford Radiological Sciences Laboratory, Stanford, California

Jan 2000 - Jan 2006

Research Assistant: Investigated the feasibility of a novel volumetric computed tomography scanner through simulations and implementation of a prototype system.

GE Healthcare (GE Medical Systems), Milwaukee, Wisconsin

July 1998 - July 2000

Edison Engineering Development Program

Patient Monitoring Systems Group: Designed hospital environment simulator for accelerated life testing of patient telemetry system.

Applied Science Lab: Designed prototype magnetic resonance application software platform.

X-ray Systems Engineering Group: Designed algorithms and phantom to test image quality performance of the first digital radiography x-ray system.

Nuclear Medicine Installed Base Team: Redesigned hardware and software components based on issues in the field and part obsolescence.

GE Healthcare (GE Medical Systems), Milwaukee, Wisconsin

Summer 1997

X-ray Systems Engineering Group: Performed six sigma evaluation of x-ray ionization chamber.

TEACHING EXPERIENCE

Marquette University, Milwaukee, Wisconsin

BIEN 194 Biocomputer Design Lab II

Spring 2006-2010

BIEN 182 Medical Imaging Physics

Fall 2006, 2008

BIEN 155 Linear Signals and Systems

Spring 2008, 2009

BIEN 4510/5510 Image Processing for the Biomedical Sciences

Fall 2009

HONORS AND AWARDS	Radiological Society of North America (RSNA) Research Trainee Prize	2005
	National Science Foundation Graduate Research Fellowship	2000-2003
PROFESSIONAL SERVICE	Member of the American Association of Physicists in Medicine (AAPM)	
	Ad hoc associate editor and reviewer for Medical Physics, Applied Radiation and Isotopes, International Journal of Biomedical Imaging, and Medical and Biological Engineering and Computing	
	Ad hoc reviewer for several NIH NIBIB study sections	
PATENTS	U.S. Patent 7,103,138 "Sampling in Volumetric Computed Tomography", Taly Gilat Schmidt and Norbert J. Pelc, issued September 5, 2006.	
GRADUATE STUDENTS - ADVISED	Reema Bhagtani, MS, 2008	
	Dan Ma, MS, 2009	
	Elizabeth Philips, MS (current)	
	Franco Rupcich, MS (current)	
	Michael Hoppe, MS (current)	
	Fatih Pektas, PhD Candidate	
GRADUATE STUDENTS - COMMITTEE MEMBER	Rahul Shingrani, MS 2006 (Advisor: Robert Molthen)	
	James Kuchenbecker, PhD, 2008 (Advisor: Jay Nietz)	
	Shivani Ratnakumar, PhD, 2008 (Advisor: Stephen Merrill)	
	Hitesh Tanna, MS, 2009 (Advisor: Joseph Carrol)	
	Wesley Day, MS (Advisor: Thomas Prieto)	
	Gregory Millar, MS (Advisor: Robert Prost)	
	David Wendell, PhD (Advisor: John LaDisa)	
UNIVERSITY SERVICE	Member, Graduate Education Committee, Department of Biomedical Engineering, 2006-present.	
	Graduate Program Assessment Leader, Department of Biomedical Engineering, 2008-present.	
	Member, Faculty Search Committee, Department of Biomedical Engineering, 2006.	
	Member, Computer Systems Engineer Search Committee, College of Engineering, 2007.	
	Member, Computer Systems Engineer Search Committee, College of Engineering, 2008.	
REFEREED PUBLICATIONS	T. G. Schmidt, "Breast CT: Current Status and New Directions," Current Medical Imaging Reviews (invited review, In press).	
	T. G. Schmidt, "CT energy weighting in the presence of scatter and limited energy resolution," Medical Physics 37 , 1056-1067, 2010.	

T. G. Schmidt, "Optimal image-based weighting for energy-resolved CT," *Medical Physics* **36**, 3018-3027, 2009.

R. A. Bhagtani*, T. G. Schmidt, "Simulated scatter performance of an inverse-geometry dedicated breast CT system," *Medical Physics* **36**, 788-796, 2009.

T. G. Schmidt, N. R. Bennett, S. R. Mazin, J. Star-Lack, E. G. Solomon, R. Fahrig, N. J. Pelc, "A prototype table-top inverse-geometry volumetric CT system," *Medical Physics*, **33**, 1867-1878, 2006.

T. G. Schmidt, R. Fahrig, N. J. Pelc, "A three-dimensional reconstruction algorithm for an inverse-geometry volumetric CT system," *Medical Physics*, **32**, 3234-3245, 2005.

T. G. Schmidt, R. Fahrig, E. G. Solomon, N. J. Pelc, "An inverse-geometry volumetric CT system with a large-area scanned source: A feasibility study," *Medical Physics*, **31**, pp. 2623-2627, 2004.

PUBLICATIONS IN
PROCEEDINGS

D. Ma*, A.V. Clough, T. G. Schmidt, "Multi-pinhole dynamic SPECT imaging: simulation and system optimization" in *Medical Imaging 2010: Physics of Medical Imaging*, SPIE 2010 (in press).

T. G. Schmidt, "Preliminary feasibility of dedicated breast CT with an inverse geometry," in *Medical Imaging 2009: Physics of Medical Imaging*, 7258, 72582Y1-6, SPIE 2009.

T. G. Schmidt, R. Fahrig, N. J. Pelc, "Noise simulations for an inverse-geometry volumetric CT system," in *Medical Imaging 2004: Physics of Medical Imaging*, 5368, pp. 420-427, SPIE 2005.

S. R. Mazin, T. G. Schmidt, E. G. Solomon, R. Fahrig, N. J. Pelc, "Geometry analysis of an inverse-geometry volumetric CT system with multiple detector arrays," in *Medical Imaging 2004: Physics of Medical Imaging*, 5368, pp. 320-329, SPIE 2004.

T. Gilat, R. Fahrig, N. J. Pelc, "Three-dimensional reconstruction algorithm for a reverse-geometry volumetric CT system with a large-array scanned source," in *Medical Imaging 2003: Physics of Medical Imaging*, 5030, pp. 103-111, SPIE 2003.

RESEARCH
PRESENTATIONS

D. Ma*, A.V. Clough, T. G. Schmidt, "Multi-pinhole dynamic SPECT imaging: simulation and system optimization" The International Society for Optical Engineering (SPIE): *Medical Imaging*, San Diego, CA 2010.

D. Ma*, A.V. Clough, T. G. Schmidt, "Feasibility of Imaging the First-pass Tracer Uptake in Small-Animal Multi-pinhole SPECT" The 95th Annual Meeting of the Radiological Society of North America, Chicago, IL 2009.

T. G. Schmidt, "Preliminary feasibility of dedicated breast CT with an inverse geometry" The International Society for Optical Engineering (SPIE): *Medical Imaging*, Orlando, FL 2009.

R. A. Bhagtani*, T. G. Schmidt, "Simulated Scatter Performance of an Inverse Geometry Dedicated Breast CT System" The 94th Annual Meeting of the Radiological Society of North America, Chicago, IL 2008.

T. G. Schmidt, "The Effects of X-ray Energy Weighting on the Detected Scatter Signal: A Simulation Study" The 94th Annual Meeting of the Radiological Society of North America, Chicago, IL 2008.

A. Keely*, I. Kyprianou, R. Jennings, K. Myers, T. G. Schmidt, "Phantom development for artifact reduction in cone-beam CT" American Association for Physicists in Medicine Annual Meeting, Minneapolis, MN 2007.

T. G. Schmidt, N. R. Bennett, S. R. Mazin, J. Star-Lack, E. G. Solomon, N. J. Pelc, "MTF analysis

*signifies student

of a prototype table-top inverse-geometry volumetric CT system” The International Society for Optical Engineering (SPIE): Medical Imaging, San Diego, CA 2005.

T. G. Schmidt, N. R. Bennett, S. R. Mazin, J. Star-Lack, E. G. Solomon, N. J. Pelc, “First images from a table-top inverse-geometry volumetric CT with a large-area scanned source,” The 90th Annual Meeting of the Radiological Society of North America (RSNA), Chicago, IL 2004, pp. 451.

T. G. Schmidt, R. Fahrig, N. J. Pelc, “Noise simulations for an inverse-geometry volumetric CT system,” The International Society for Optical Engineering (SPIE): Medical Imaging, San Diego, CA 2004.

T. Gilat, R. Fahrig, N. J. Pelc, “A 3D reconstruction algorithm for an inverse-geometry volumetric CT system with a large-array scanned source,” The 89th Annual Meeting of the Radiological Society of North America (RSNA), Chicago, IL 2003, pp. 691-692.

T. Gilat, R. Fahrig, N. J. Pelc, “Three-dimensional reconstruction algorithm for a reverse-geometry volumetric CT system with a large-array scanned source,” The International Society for Optical Engineering (SPIE): Medical Imaging, San Diego, CA 2003.

T. Gilat, R. Fahrig, E. G. Solomon, N. J. Pelc, “Volumetric CT with a large-array scanned source,” The 88th Annual Meeting of the Radiological Society of North America (RSNA), Chicago, IL 2002, pp. 404.

INVITED TALKS

Pulmonary Research Seminar, Zablocki VA Medical Center, “Multi-energy CT,” Sept 2009, Milwaukee, WI.

MU High Performance Computing Seminar, “Monte Carlo simulations for investigating energy weighting in the presence of scatter in computed tomography,” April 2009, Milwaukee, WI.

Conversations About Research on Women’s Issues, Marquette University, “Recent Controversies and New Directions in Breast Cancer Screening,” Sept 2008, Milwaukee, WI.

UWM Medical Imaging Seminar, “Monte Carlo simulations for investigating CT scatter and dose,” March 2008, Milwaukee, WI.

MU High Performance Computing Seminar, “HPC Monte Carlo simulations of CT Imaging systems,” Feb 2008, Milwaukee, WI.

Advanced Rehabilitation Research Training (ARRT) Seminar, “New Directions in CT Imaging,” September 2006, Milwaukee, WI.

Pulmonary Research Seminar, Zablocki VA Medical Center, “Inverse-Geometry CT and other imaging projects,” March 2006, Milwaukee, WI.