

Jin Chen

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OBJECTIVE	Full-time position that allows for advanced research in imaging systems, with a particular focus on software development (i.e., modeling, analysis, design, visualization)	
AVAILABILITY	<ul style="list-style-type: none">• Start time is negotiable, but preferably July–Aug 2012• Geographic location is flexible.	
RESEARCH INTERESTS	Parallel computing, image processing/reconstruction algorithms, near-infrared (NIR) biomedical imaging, multimodal systems.	
EDUCATION	Rensselaer Polytechnic Institute , Troy, NY USA Ph.D., Biomedical Engineering (expected graduation in Spring 2012) <ul style="list-style-type: none">• Dissertation Topic: “Molecular Time-domain Perturbation Monte Carlo Method with a priori information in small animals”• Advisor: Dr. Xavier Intes• GPA: 4.0 Nanjing University , Nanjing, Jiangsu China B.A., Biomedical Engineering, June 2006	
RESEARCH EXPERIENCE	Rensselaer Polytechnic Institute , Troy, New York USA <i>Research Assistant</i> Department of Biomedical Engineering	Jan 2008–present
	<ul style="list-style-type: none">• Key member for developing a new time-resolved optical tomography platform for preclinical fluorescent and functional imaging with patterned NIR light illumination.• Focused on the design of 3D forward/inverse algorithms and software development with parallel computing techniques (MPI & OpenMP).• Incorporated and validated the software with multimodal experimental data, utilizing image processing approaches including image sampling, registration and segmentation.• Developed expertise in Monte Carlo method, multi-spectral reconstruction, regularization method, singular value analysis, optimization and 3-D filtering for imaging applications.	
	Nanjing University , Nanjing, Jiangsu China <i>Undergraduate Researcher</i> Department of Electronic Engineering	Jan 2005–Dec 2006
	<ul style="list-style-type: none">• Studied the force and acceleration on frequency changes of quartz resonators using Finite Element Method.• Developed an ERP System with UI module (Ajax) and kernel module (ASP).	
AWARDS AND DISTINCTIONS	Founders Award of Excellence, Rensselaer Polytechnic Institute, 2010. Best Student Poster Award, OSA 2010 Biomed Miami Conference, 2010. Outstanding Presentation of Original Scientific Research, 36 th Annual Northeast Bioengineering Conference, 2010. Teaching Assistantship awarded by Department of Biomedical Engineering, Rensselaer Polytechnic	

Institute, 2009–2011.

People Scholarship, Nanjing University, China, 2003,2004,2005.

Distinguished student council member, Nanjing University, China, 2004.

First prize, National Web Design Competition - University level, China, 2004.

PEER-REVIEWED **J Chen** and X Intes, Comparison of Monte Carlo methods for fluorescence molecular tomography
JOURNAL ARTICLES - computational efficiency. *Medical Physics*, Vol 38, Issue 10, pp. 5788-5798, 2011. (Selected for
publication in the *Virtual Journal for Biomedical Optics (VJBO)*)

J Chen, V Venugopal, and X Intes, A Monte Carlo based method for fluorescence tomographic
imaging with lifetime multiplexing using time gates. *Biomedical Optics Express*, Vol 2, Issue 4, pp.
871-886, 2011

V Venugopal and **J Chen** and X Intes, Development of an optical imaging platform for functional
imaging of small animals using wide-field excitation. *Biomedical Optics Express*, Vol 1, Issue 1, pp.
143, 2010.

V Venugopal, **J Chen**, Frederic Lesage and X Intes, Full-field time-resolved fluorescence tomography
of small animals. *Optics Letter*, Vol 35, Issue 19, 2010.

J Chen, V Venugopal, Frederic Lesage and X Intes, Time resolved diffuse optical tomography with
patterned light. *Optics Letter*, Vol 35, Issue 13, pp. 125112, 2010. (Selected for publication in
the *Virtual Journal for Biomedical Optics (VJBO)*)

J Chen and X Intes, Time-gated perturbation Monte Carlo for whole body functional imaging in
small animals. *Optics Express*, Vol 17, Issue 22, pp. 19566-19579, 2009

Yun Jing, **J Chen**, Xiao Chen and Xun Gong, Frequency shift of thickness-shear vibrations of AT-
cut quartz resonators due to a liquid layer with the electrode stiffness considered. *IEEE transactions*
on ultrasonics, ferroelectrics, and frequency control, Vol 54, Issue 7, pp. 1290-1292, 2007

Yun Jing, **J Chen**, X Gong and J Duan, Stress-induced frequency shifts in rotated Y-cut lang-
asite resonators with electrodes considered. *IEEE transactions on ultrasonics, ferroelectrics, and*
frequency control, Vol 54, Issue 5, pp. 906-909, 2007

JOURNAL ARTICLES **J Chen** and X Intes, “Widefield Mesh-based Monte Carlo Method in time-domain Fluorescence
IN PREPARATION Molecular Tomography,” *Journal of Biomedical Optics*, in preparation.

V Venugopal, **J Chen**, M Barroso and X Intes, “NIR FRET Optical Tomography,” *Proceedings of*
the National Academy of Sciences, in preparation.

J Chen and X Intes, “Mesh-model and datatype optimization in diffuse optics tomography,” in
preparation.

BOOK CHAPTER X Intes, V Venugopal, **J Chen**, Fred Azar, Multimodal diffuse imaging system, in *Biomedical Op-
tical Imaging Techniques: Design and Applications*, Springer, in press, Spring 2012.

CONFERENCE **J Chen**, and X Intes, “Mesh-based Monte Carlo method for time-gated optical tomography,” *Pro-
CEEDINGS PROCEEDINGS PAPER*s *ceedings of the IEEE 37th Annual Northeast Bioengineering Conference*, Rensselaer Polytechnic
Institute, Troy, NY, Apr 2011.

V Venugopal, **J Chen**, and X Intes, "Adaptive correction of dynamic range in small animal wide-field fluorescence tomography," *Proceedings of the IEEE 37th Annual Northeast Bioengineering Conference*, Rensselaer Polytechnic Institute, Troy, NY, Apr 2011.

V Venugopal, **J Chen**, M Barroso and X Intes, "In vivo reconstruction of NIR FRET using full-field time resolved optical tomography," *Proceedings of the IEEE 37th Annual Northeast Bioengineering Conference*, Rensselaer Polytechnic Institute, Troy, NY, USA, Apr 2011

M. Pimpalkhare, V Venugopal, **J Chen**, and X Intes, "Anatomical segmentation for guided fluorescence molecular tomography in small animals," *Proceedings of the IEEE 37th Annual Northeast Bioengineering Conference*, Rensselaer Polytechnic Institute, Troy, NY, Apr 2011.

J Chen, V Venugopal, and X Intes, "Tomography in time-domain: Monte Carlo approaches and efficiency comparison," SPIE BIOS, Multimodal Biomedical Imaging, San Francisco, CA, Jan 2011.

V Venugopal, **J Chen**, M. Barroso, and X Intes, "In vivo reconstruction of NIR FRET using full-field time resolved optical tomography," in *Proceedings of SPIE (2011)*, pp. 78920I-78920I-8.

V Venugopal, **Jin Chen**, F Lesage, and X Intes, "Time Resolved Diffuse Optical Tomography Using a Digital Light Processor," in Biomedical Optics, OSA Technical Digest (CD) (Optical Society of America, 2010), paper BSuD52.

Jin Chen, and X Intes, "Monte Carlo method for time-gated fluorescence tomography in small animals," in Biomedical Optics, OSA Technical Digest (CD) (Optical Society of America, 2010), paper BSuD95.

Jin Chen, V Venugopal, and X Intes, "Towards time-resolved whole body optical imaging in small animals based on Monte Carlo method," *Proceedings of the IEEE 36th Annual Northeast Bioengineering Conference*, Columbia University, New York, NY, Apr 2010.

V Venugopal, **J Chen**, and X. Intes, "On the use of wide-field light patterns for small animal optical molecular imaging," *Proceedings of the IEEE 36th Annual Northeast (2010)*, Columbia University, New York, NY, Apr 2010.

Jin Chen, V Venugopal and X Intes, "MRI Guided Preclinical Molecular Imaging in Time-domain: Perturbation Monte Carlo Approach," SPIE BIOS, Multimodal Biomedical Imaging, San Francisco, CA, Jan 2010.

V Venugopal, **Jin Chen**, and X Intes, "A quantitative time domain functional imager for small animal studies," SPIE BIOS, Multimodal Biomedical Imaging, San Francisco, CA, Jan 2010.

J Chen, V Venugopal, and X Intes, "Diffuse optical tomography with time-gated perturbation Monte Carlo method," *In Proceedings of SPIE*, Vol.7171, 717113, San Jose, USA, Jan 2009.

V Venugopal, **J Chen** and X Intes, "Quantifying optical properties in small animals using MR-guided multispectral time-resolved imaging," *In Proceedings of SPIE*, Vol.7171, 717114, San Jose, USA, Jan 2009.

J Chen and X Intes, "Time-gated perturbation Monte Carlo method for functional imaging of cancer," Conference on cancer genomics, Rensselaer, NY, USA, Nov 2008.

J Chen and X Intes, "Time-resolved perturbation Monte Carlo for 3D optical imaging in small animals," *Proceedings of the IEEE 34th Annual Northeast Bioengineering Conference*, Brown University, Providence, RI, USA, Apr 2008.

CONFERENCE
ABSTRACTS

V Venugopal, **J Chen**, and X Intes, "A quantitative time domain functional imager for small animal studies," in Multimodal Biomedical Imaging (BiOS) SPIE Photonics West, pp. 717113-717113-9, Jan 2010.

J Chen, V Venugopal and X Intes, "Time gated functional diffuse optical tomography based on Monte Carlo," SPIE BIOS, Multimodal Biomedical Imaging, San Francisco, CA, Jan 2010.

TEACHING
EXPERIENCE

Rensselaer Polytechnic Institute, Troy, New York USA

Teaching Assistant

Jan 2010–Dec 2011

- ENGR 1100: **Introduction to Engineering Analysis**, Fall 2011, Fall 2010
 - Provided in-class help and office hours where freshmen learned engineering mechanics (statics) and numerical methods for solving engineering problems.
 - Held monthly Matlab tutorial sessions; graded weekly class assignments and exams.
- BIOL 2120: **Introduction to Cell and Molecular Biology**, Spring 2010
 - Responsible for lecture and supervision of laboratory weekly where freshmen learned how to use basic laboratory equipment to study cell growth and protein analysis.
 - Graded weekly lab reports and quizzes.
- BMED 2200: **Modeling of Biomedical Systems**, Spring 2009
 - Provided in-class help and office hours where sophomore students combined Simulink with DEDiscover to implement mathematical methods (PDE&ODE) to model physiological systems in biomedical engineering.
 - Made solutions for assignments, projects and exams; graded exams, monthly projects and weekly assignments on programming, drafting and numerical problems.

SERVICE

Recent contributor to several open-source software projects, including:

- Mesh-based Monte Carlo (mMC)
- Time-gated Monte Carlo method for light propagation(tMCimg)

Frequent contributor to Wikipedia.

- Contributions to articles on Monte Carlo method and diffuse optical tomography.

The Optical Society (OSA), Member, 2008–present

The International Society for Optics and Photonics (SPIE), Member, 2008–present

EXTRACURRICULAR
ACTIVITIES

Vice President, Information Technology Dept., Student Council, Nanjing University, 2004–2005

Residential IT Director, Nanjing University, 2003–2004

President, Propaganda Section, Electronic Engineering Student Council, Nanjing University, 2003–2004

Lily Studio, member, 2003–2005

- Early team member of web-based software for industry and government agencies.
- Provided technical support services for students.

PROFESSIONAL
EXPERIENCE

Rainbow Qiangxin Technologies, Nanjing, Jiangsu China

Web Developer

June 2006–Dec 2006

- Designed and developed the company homepage.
- Assisted in administration of system hardwares.
- Provided technical support for Internet presence management.

COMPUTER SKILLS

Languages

- C, Matlab, HTML/CSS, JavaScript, Unix shell scripting.

Operating Systems

- Linux, Windows, Apple OS X.

Applications

- Development tools (gcc/g++/make/gdb/gprof/valgrind/SVN)
- Image processing (Amira/VTK)
- Scientific computing (Matlab/DEDiscover)
- Design (GIMP/Inkscape/PhotoShop/CorelDraw/Illustrator/Painter)
- Publishing (LaTeX/HTML/OpenOffice)
- Editing (Vim)
- Database (MySQL)

Other

- Parallel Computing (OpenMP & MPI)
- Web and graphic design.