XIAOZHENG (JENNY) ZENG

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OBJECTIVE

Seeking a position in biomedical/electrical/software research and development.

EDUCATION

Ph.D., *Electrical and Computer Engineering*, Michigan State Univ. 01/2004 – 12/2007
M.Sc., *Electronic and Electrical Engineering*, Univ. of Sheffield, Sheffield, UK 09/2002 – 09/2003
B.Sc., *Electrical and Computer Engineering*, Nanjing Univ., Nanjing, China 09/1998 – 06/2002

WORK EXPERIENCE

Summer Intern
*Imaging and Visualization Dept.***,** Siemens Corporate Research, Princeton, NJ 05/2007 – 08/2007

- Implemented a multiple-organ segmentation algorithm for 3D CT images using the level set method
- Optimized and integrated the algorithm to an extensive C++ image segmentation framework

Research Assistant
Biomedical Ultrasonics and Electromagnetics Lab, Michigan State Univ. 01/2004 – 12/2007

- Developed a numerical ultrasound simulator package using MATLAB, C and C++
- Designed and simulated ultrasound phased arrays for therapy and imaging
- Modeled ultrasound induced heating for cancer treatment planning
- Processed PET images and performed motion compensation
- Presented in conferences and published technical papers

Research Assistant
Biomedical. Ultrasonics Lab, State Key Lab of Modern Acoustics, Nanjing Univ. 06/2001 – 06/2002

- Created mathematical models of HIFU (High Intensity Focused Ultrasound) transducers
- Wrote numerical programs in Fortran

TECHNICAL SKILLS

- *Systems*: Microsoft Windows 9x/NT/2000/XP, Linux
- *Languages*: C/C++, MATLAB, Java, Fortran, Intel x86/IA32/8051 Assembly, XML, UML, VHDL
- *Development Environments***:** Microsoft Visual Studio 6/.NET/2005, Compaq Visual Fortran, MATLAB, GCC, MASM, PSpice, Protel
- *Other*: Microsoft Office, Microsoft Visio, Origin, LaTeX, LyX, CVS, Subversion, Doxygen

PUBLICATIONS

- **X. Zeng** and R. J. McGough, "Evaluation of the angular spectrum approach for simulations of near-field pressures," *accepted to the Journal of the Acoustical Society of America*, 2007.
- **X. Zeng** and R. J. McGough, "Optimization of power distributions produced by ultrasound phased arrays through waveform diversity," *Proceeding of the IEEE International Ultrasonics Symposium*, New York, NY, Oct., 2007.
- **X. Zeng** and R. J. McGough, "Rapid simulations of large ultrasound therapy arrays with the fast near-field method and angular spectrum approach," *Proceeding of the 6th International Symposium on Therapeutic Ultrasound*, Oxford, UK, 2006.
- **X. Zeng** and R. J. McGough, "Evaluation of angular spectrum approach for simulations of spherically focused ultrasound phased arrays," *Proceeding of 2006 IEEE International Electro/Information Technology Conference*, East Lansing, Michigan, 2006.
- L. Wu, **X. Zeng** and R. J. McGough, "Computer modeling of hyperthermia temperature distributions produced by hybrid RF/US phased arrays," *Proceeding of the 5th International Symposium on Therapeutic Ultrasound*,

Boston, Massachusetts, 2005.

- **X. Zeng**, J. F. Kelly and R. J. McGough, "Multi-planar angular spectrum approach applied to pressure field calculations of spherically focused pistons," *Proceeding of the 2005 Canadian Acoustic Association Conference*, London, Ontario, Canada, 2005.
- **X. Zeng**, L. Wu, and R. J. McGough, "Fast pressure field calculations applied to large spherical ultrasound phased arrays designed for thermal therapy," *Progress in Biomedical Optics and Imaging,* Vol. 6, No. 13, pp. 228-239, 2005.

CONFERENCE PRESENTATIONS

- **X. Zeng** and R. J. McGough, "Power optimization in hyperthermia with waveform diversity,"*13th International Symposium on Applied Electromagnetics and Mechanics*, East Lansing, MI, Sep., 2007.
- **X. Zeng** and R. J. McGough, "Large ultrasound phased array simulations with the angular spectrum approach in a layered tissue model," Vol. 6, No. 3, *CAP Congress*, St. Catharines, Canada, May, 2006.
- **X. Zeng** and R. J. McGough, "Simulation of pressure and temperature fields due to nonlinear ultrasound propagation," *2006 annual Meeting of Society for Thermal Medicine*, Bethesda, Maryland, April 6 – 8, 2006.
- **X. Zeng** and R. J. McGough, "Angular spectrum approach for fast simulations of ultrasound therapy arrays," *150th meeting of the Acoustical Society of America /NOISE-CON*, Minneapolis, Minnesota, Oct. 2005.
- L. Wu, **X. Zeng** and R. J. McGough, "Computer modeling of a hybrid RF/US phased array system for hyperthermia cancer treatments in the intact breast ," *Society for Thermal Medicine Annual Meeting*, Bethesda, MD, Apr. 2005.
- **X. Zeng** and R. J. McGough, "Spatially adaptive point source calculations of the pressure fields produced by rectangular ultrasound transducers," *9th International Congress on Hyperthermic Oncology*, St. Louis, MO, April, 2004.

ADVANCED COURSES

- **A**coustics
- **A**nalysis of Stochastic Systems
- **D**igital Communications
- **D**igital Image Processing
- **E**lectromagnetic Fields and Waves I & II
- **N**umerical Analysis
- **M**edical Imaging
- **R**adio Frequency Electronics
- **S**peech Technology
- **RF** and Optical Telecommunications

HONORS

- *Best Student Paper Award*, Canadian Association of Physicists 2006
- *Best Abstract Award*, Society for Thermal Medicine Annual Meeting 2005
- *Excellent Graduate*, Nanjing University 2002
- *Outstanding Student*, Nanjing University 1998–2002

PROFESSIONAL MEMBERSHIPS

- IEEE *Student Member*
- *Member* of Society for Thermal Medicine

LEADERSHIP

- *Vice Student Chair*, Dept. of Electrical and Computer Engineering, Nanjing Univ., China 1999 – 2002
- *Editor-in-Chief*, "Surfing" Magazine (the first IT periodical on campus), Nanjing Univ. 1999 – 2001

LANGUAGES

- English (*fluent*)
- Mandarin Chinese (*native*)