Curriculum Vitae

Personal Information

Name:	Antonios Matakos
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Education

Sep 2007 – Aug 2013	Ph.D.	Electrical Engineering	University of Michigan
Sep 2007 – May 2009	M.Sc.	Electrical Engineering	University of Michigan
Oct 2001 – Nov 2006	B.Eng.	Electrical Engineering	Aristotle University of Thessaloniki

Scholarships and Awards

- 2011 Engineering Graduate Symposium Technical Session Award (Signal Processing).Poster presentation in University of Michigan Engineering Graduate Symposium.
- 2010 Reithmiller Fellowship, University of Michigan.
- 2004 Hellenic Government scholarship for academic year 2003-2004.
- 2002 Hellenic Government scholarship for academic year 2001-2002.

Publications

Refereed Journals

- 1. A Matakos, J Balter, Y Cao "Undistorted field map estimation for liver imaging using multi-echo acquisitions" *Med. Phys.* 2015. In preparation
- 2. A Matakos, J Balter, Y Cao "Geometric distortion correction of anatomic MRI using undistorted BO inhomogeneity maps for precision therapy" *Med. Phys.*, 2014. Under review
- 3. A Matakos, J Balter, Y Cao "Estimation of geometrically undistorted B0 inhomogeneity maps" *Med. Phys.* 59(17):4945-59, Sep 2014
- 4. A Matakos, J F Nielsen, J A Fessler "Model based Nyquist ghost correction for EPI" *IEEE Trans. Med. Imag.* 2013. In revision
- 5. A Matakos, S Ramani, J A Fessler "Accelerated edge-preserving image restoration without boundary artifacts" *IEEE Trans. Im. Proc.* 22(5):2019-29, May 2013

Conference Proceedings

- 1. A Matakos, S Ramani, J A Fessler "Image restoration using non-circulant shift-invariant system models" *Proc. IEEE Intl. Conf. on Image Processing*, pp. 3061-4, 2012
- 2. A Matakos, J A Fessler "Dynamic MR image and fieldmap joint reconstruction accounting for through-plane fieldmap gradients" *Proc. IEEE Intl. Symp. Biomed. Imag.*, pp. 393-6, 2011
- 3. A Matakos, J A Fessler "Joint estimation of image and fieldmap in parallel MRI using single-shot acquisitions" *Proc. IEEE Intl. Symp. Biomed. Imag.*, pp. 984-7, 2010

Conference Abstracts

- 1. A Matakos, J Balter, Y Cao "Novel method for geometrically undistorted B0 inhomogeneity field map estimation and image correction" *AAPM Annual Meeting, Med. Phys.* 41(6):528, Jun. 2014
- 2. A Matakos, J Balter, Y Cao "Undistorted phase-wraparound free field map estimation from triple gradient-echoes" *MR in RT Symposium*, 2014
- 3. A Matakos, J Balter, Y Cao "Iterative correction of subject-dependent B0 inhomogeneity field maps for geometric distortion correction" *ESTRO 33*, 2014
- 4. A Matakos, S Ramani, J A Fessler "Image restoration using non-circulant shift-invariant system models" *UM Graduate Symposium*, 2011
- 5. A Matakos, J A Fessler "Dynamic MR image and field map joint reconstruction accounting for through-plane field map gradients" *UM Graduate Symposium*, 2010

Theses

- 1. A Matakos "Dynamic Image and Fieldmap Joint Estimation Methods for MRI Using Single-Shot Trajectories" *Ph.D. thesis*, University of Michigan, Dept. of Electrical Engineering:Systems, Jun 2013
- A Matakos "Improved method for 3D reconstruction of coronary arteries using 3D IVUS" *Diploma thesis*, Aristotle University of Thessaloniki, Polytechnic School, Dept. of Electrical Engineering, Nov 2006

Work Experience

Research

Sep 2013 – Present	Post-doctoral Research Fellow
	Dept. of Radiation Oncology, University of Michigan Medical School
	MRI image reconstruction for radiation therapy. Focus on geometric distortion
	correction through statistical modeling and optimization methods.
Jan 2008 – Aug 2013	Graduate Student Research Assistant
	Dept. of Electrical Engineering: Systems, University of Michigan
	Iterative, model-based image reconstruction methods for MRI. Focus on field
	inhomogeneity and ghosting artifact correction.
	Model-based, edge-preserving image restoration methods
Jul 2005 – Sep 2005	Research Intern

	Biomedical Image Technologies Laboratory, Dept. of Electronic Engineering, Technical University of Madrid. Implementation of image processing algorithms on FPGA.
Sep 2004 – Nov 2006	Undergraduate Student Research Assistant
	Cardiovascular Engineering and Atherosclerosis Laboratory, Medical School,
	Aristotle University of Thessaloniki.
	Image processing algorithms and vessel modeling for Real 3D IVUS
Teaching	
Jan 2012 – Apr 2012	Graduate Student Instructor (W 2012)
	Dept. of Electrical Engineering and Computer Science, University of Michigan
	Image Processing (EECS 556)
Jan 2008 – Apr 2009	Graduate Student Instructor (W 2008, F 2008, W 2009)
	College of Engineering, University of Michigan
	Introduction to computers and programming (ENGR 101)
Other	
Oct 2005 – Jun 2007	Software Developer/Engineer
	Voyager Software Solutions – Thessaloniki, Greece

Multimedia and content management .Net application programming. Front end GUI and web development. Back end database and web server programming.

Research Interests

- Applications of MRI in Radiation Therapy
- MRI geometric distortion correction
- Model based image reconstruction for MRI
- Model based image restoration
- Biomedical imaging
- Statistical image and signal processing
- Inverse problems and optimization

Current Projects

- Applications of MRI in precision Radiation Therapy
- Geometric distortion correction of MR anatomical imaging
- Estimation of undistorted B0 inhomogeneity maps

Past Projects

- MRI image and inhomogeneity field map joint estimation
- MRI model based ghost artifact correction for EPI trajectories

• Edge preserving image de-noising and de-blurring

Skills

Languages

- English (fluent)
- Greek (native)
- French (basic)
- German (basic)

Programming

- Scientific: Matlab (10+ years), LaTeX (10+ years), R (2 years)
- Object Oriented: C++ (10+ years), Java (10+ years), C# (3 years), VB .Net (3 years)
- Database: SQL (3 years)
- Web: html, css, javascript (2 years)
- Excel: VBA (2 years)

Technical

- Operating Systems: Windows (XP, 7, 8), Linux (Ubuntu, Debian, Red Hat, Mint), Mac OS X
- Office Suites: MS Office, OpenOffice, LibreOffice
- IDEs: Visual Studio, Eclipse, TexMaker, Kile, Dreamweaver
- CAD: AutoCAD, Rhino