

John Melonakos

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Education

Georgia Institute of Technology 2008
Degree: PhD in Electrical and Computer Engineering Major GPA: 4.00/4.00
Minors: Business Management and Mathematics
Thesis: Geodesic Tractography Segmentation for Directional Medical Image Analysis

Georgia Institute of Technology 2006
Degree: MS in Electrical and Computer Engineering Major GPA: 4.00/4.00
Minor: Neuroscience

Brigham Young University 2004
Degree: BS in Electrical Engineering GPA: 3.95/4.00
Minor: Mathematics Magna cum Laude

Work Experience

AccelerEyes: Co-founder & CEO 2007 – present Atlanta, GA
[\[Web\]](#) Delivering Productivity in Technical Computing. Selling Jacket, the GPU Engine for MATLAB, targeted at making software faster for scientists, engineers, and financial analysts.

Georgia Institute of Technology: GRA 2004 – 2008 Atlanta, GA
Advisor: Professor Allen Tannenbaum
[\[Web\]](#) Development of medical image processing algorithms using results from control theory. Incorporation of these algorithms into software packages.

General Electric: Summer Researcher 2006 Niskayuna, NY
[\[Web\]](#) Developed medical image processing algorithms for the detection of lung and colon cancer using shape-based Bayesian detection methods.

Torion Technologies: Electrical Engineer 2003 – 2004 Provo, UT
[\[Web\]](#) Developed electronics for a handheld chemical and biological warfare agent detector utilizing vacuum gas chromatography and ion trap mass spectrometry.

Brigham Young University: RA 2003 – 2004 Provo, UT
[\[Web\]](#) Designed a low-power wireless communication solution for J&J.

Hewlett-Packard: Summer Project Leader 2003 Vancouver, WA
[\[Web\]](#) Led a group in designing and building a diagnostic print cartridge.

Lockheed Martin: Management Intern 2002 Fort Worth, TX
[\[Web\]](#) Served as a liaison between several R&D groups and a VP of Engineering.

Brigham Young University: TA	2002 – 2003	Provo, UT
[Web] Teaching Assistant for Analog Circuits and Digital Signal Processing courses.		
Catawba County of North Carolina	2001	Newton, NC
[Web] Developed a proposal to upgrade county radio systems.		
Church of Jesus Christ of Latter-day Saints	1999 – 2001	Venezuela
[Web] Led the missionary efforts conducted across a broad area of Venezuela.		

Awards

NIH NIMH SBIR Phase I: \$250,000 (2010-2011)
 Technology Association of Georgia Top 40 Award (2009 & 2010)
 SC09 Disruptive Technology: [\[Web\]](#)
 GRA/TAG Business Launch Competition Winner: \$300,000 (2009) [\[Web\]](#)
 Georgia Tech Business Plan Competition Winner: \$55,000 (2008) [\[Web\]](#)
 Georgia Bowl Business Plan Competition Winner (2008) [\[Web\]](#)
 Moot Corp Competition Venture Challenge Award: \$1,000 (2008) [\[Web\]](#)
 NSF TI:GER IGERT Fellowship (2006: Full-tuition + \$60,000 in stipends) [\[Web\]](#)
 Senator Sam Nunn Security Program Pre-Doctoral Fellowship (2006: \$6,000) [\[Web\]](#)
 GE Global Research Intern Award Finalist (2006)
 NSF HNM IGERT Fellowship (2004: Full-tuition + \$60,000 in stipends) [\[Web\]](#)
 Georgia Institute of Technology President's Fellowship (2004: \$27,500) [\[Web\]](#)
 BYU Heritage Scholarship: Full-tuition (1998-1999; 2001-2004)
 State Farm Business Leader Scholarship: \$3,000 (2001)
 National Merit Scholarship: \$4,000 (1998)
 Elks Lodge Scholarship: \$4,000 (1998)
 Tylenol Scholarship: \$1,000 (1998)
 Service Merchandise Scholarship: \$500 (1998)
 High School Valedictorian (1998) [\[Web\]](#) & Eagle Scout (1993) [\[Web\]](#)

Other

- GMAT (750), GRE (800/800 M; 680/800 V), SAT (800/800 M; 750/800 V)
- Open source developer for ITK [\[Web\]](#) and Slicer [\[Web\]](#)
- Member of National Alliance for Medical Image Computing (NA-MIC) [\[Web\]](#)

Patents

Pryor G., Malcolm J., Melonakos J., Rehman T. System for Improving Utilization of GPU Resources. US Patent Application 20090141034. June 4, 2009. [\[Web\]](#)

Journal Publications (Peer-reviewed)

Niethammer M., Zach C., Melonakos J., Tannenbaum A. Near-tubular fiber bundle segmentation for diffusion weighted imaging: segmentation through frame reorientation. *Neuroimage*. 2009 Mar;45(1 Suppl):S123-32. PMID: 19101640. [\[Web\]](#)

Rehman T., Haber E., Pryor G., Melonakos J., Tannenbaum A. 3D Nonrigid Registration via Optimal Mass Transport on the GPU. *Med Image Anal*. 2008 PMID: 19135403. [\[Web\]](#)

Melonakos J., Pichon E., Angenent S., Tannenbaum A. Finsler active contours. *IEEE Trans Pattern Anal Mach Intell*. 2008 Mar;30(3):412-23. PMID: 18195436. [\[Web\]](#)

Journal Publications (Open science peer-reviewed)

Melonakos J., Krishnan K., Tannenbaum A. “An ITK Filter for Bayesian Segmentation: itkBayesianClassifierImageFilter”. *Insight Journal*. Jan 2006. [\[Web\]](#)

Gao Y., Melonakos J., Tannenbaum A. “Conformal Flattening ITK Filter”. *Insight Journal*. Jul 2006. [\[Web\]](#)

Melonakos J., Al-Hakim R., Fallon J., Tannenbaum A. “Knowledge-Based Segmentation of Brain MRI Scans Using the Insight Toolkit”. *Insight Journal*. Oct 2005. [\[Web\]](#)

Conference Publications (Peer-reviewed)

Mohan V., Sundaramoorthi G., Melonakos J., Niethammer M., Kubicki M., Tannenbaum A. Tubular Surface Evolution for Segmentation of the Cingulum Bundle From DW-MRI. *Proceedings of the Second Workshop on Mathematical Foundations of Computational Anatomy (MFCA'08), Int Conf Med Image Comput Comput Assist Interv*. 2008. [\[Web\]](#)

Lankton S., Melonakos J., Malcolm J., Dambreville S., Tannenbaum A. Localized Statistics for DW-MRI Fiber Bundle Segmentation. *IEEE Workshop on Mathematical Methods in Biomedical Image Analysis*. 2008. [\[Web\]](#)

Mendonca P., Bhotika R., Zhao F., Melonakos J., Sirohey S. Detection of Polyps via Shape and Appearance Modeling. In *Proceedings of the MICCAI Workshop on Computational and Visualization Challenges in the New Era of Virtual Colonoscopy*, 2008. [\[PDF\]](#)

Niethammer M., Zach C., Melonakos J., Tannenbaum A. Tubular Fiber Bundles Segmentation for Diffusion Weighted Images. In *MICCAI Workshop on Computational Diffusion MRI*, 2008. [\[PDF\]](#)

Melonakos J., Gao Y., Tannenbaum A. Tissue Tracking: Applications for Brain MRI Classification. In *SPIE Medical Imaging*, 2007. [\[PDF\]](#)

Melonakos J., Mendonça P., Bhotika R., Sirohey S., Miller J. A Probabilistic Model for Hausstral Curvatures with Applications to Colon CAD. In MICCAI, 2007. Springer. [\[PDF\]](#)

Melonakos J., Mohan V., Niethammer M., Smith K., Kubicki M., Tannenbaum A. Finsler Tractography for White Matter Connectivity of the Cingulum Bundle. In MICCAI, 2007. Springer. [\[PDF\]](#)

Melonakos J., Niethammer M., Mohan V., Kubicki M., Miller J., Tannenbaum A. Locally-Constrained Region-Based Methods for DW-MRI Segmentation. In Mathematical Methods in Biomedical Image Analysis (MMBIA), 2007. [\[PDF\]](#)

Mohan V., Melonakos J., Niethammer M., Kubicki M., Tannenbaum A. Finsler Level Set Segmentation for Imagery in Oriented Domains. In British Machine Vision Conference (BMVC), 2007. [\[PDF\]](#)

Rehman T., Pryor G., Melonakos J., Tannenbaum A. Multi-resolution 3D Nonrigid Registration via Optimal Mass Transport on the GPU. In Proceedings of Computational Biomechanics for Medicine-II, MICCAI, pages 122-132, 2007. [\[PDF\]](#)

Al-Hakim R., Fallon J., Nain D., Melonakos J., Tannenbaum A. A Dorsolateral Prefrontal Cortex Semi-Automatic Segmenter. In SPIE Medical Imaging, 2006. [\[PDF\]](#)

Poster-only Submissions (Peer-reviewed)

Malcolm, J., Pryor G., Rehman T., Melonakos J. Scientific Computing on GPUs using Jacket for MATLAB. Supercomputing Conference, 2009. [\[Web\]](#)

Pryor G., Rehman T., Melonakos J., Malcolm J. Jacket: A GPU Engine for MATLAB. Supercomputing Conference, 2008. [\[Web\]](#)

Melonakos J., Gao Y., Tannenbaum A. "Conformal Flattening of Brain Ventricles". MemBIS 2006, Memphis, TN. [\[PPT\]](#)

Reviewer for: *NIH SBIR/STTR Panel, Pattern Recognition Letters, MICCAI, MMBIA, Computers in Biology and Medicine, International Journal of Computer Vision, Insight Journal, Food and Bioprocess Technology*