

JONATHAN D. SUEVER, B.S., PH.D.

CONTACT	<i>Email:</i> suever@gatech.edu <i>Tel.:</i> (256) 682-8627 <i>Web:</i> www.suever.net
EDUCATION	Doctor of Philosophy (Ph.D.), Bioengineering Georgia Institute of Technology & Emory University , 2008 - 2013, GPA: 3.83/4.0 <ul style="list-style-type: none">• National Science Foundation Graduate Research Fellow• National Institutes of Health T32 Training Grant Trainee• Georgia Institute of Technology President's Fellow Bachelor of Science (B.S.), Biomedical Engineering and Mathematics University of Alabama at Birmingham , 2004 - 2008, GPA: 4.0/4.0 <ul style="list-style-type: none">• University Honors Program, Engineering Honors Program, <i>summa cum laude</i>• Jane Knight Lowe Scholar
SKILLS	Languages & Technologies <ul style="list-style-type: none">• <i>Scientific Computing:</i> MATLAB/Octave (expert), Python 2/3 (expert), C (proficient), R (proficient)• <i>Object-Oriented:</i> C++ (proficient), Java (proficient)• <i>Databases:</i> MS SQL (proficient), MySQL (proficient), MongoDB (proficient)• <i>Web:</i> CSS (proficient), HTML (proficient), JavaScript (proficient)• <i>Other:</i> DICOM (expert), Bash (proficient), L^AT_EX (proficient) Markdown (proficient) Environments <ul style="list-style-type: none">• <i>Operating Systems:</i> Linux (Debian, Ubuntu, RHEL), Mac OS, Windows• <i>IDEs:</i> Eclipse, NetBeans, PyCharm, R Studio, Sublime Text 2, Visual Studio• <i>Documents & Markup:</i> Microsoft Office, T_EXShop, vi/Vim, OpenOffice• <i>Web:</i> Amazon EC2, Apache, JBoss, Nginx• <i>Version Control:</i> Git, Mercurial, Subversion
WORK EXPERIENCE	Research Scientist I JAN. 2015 - PRESENT <i>Cardiac Imaging Technology Lab, Geisinger Health System, Danville, PA</i> <ul style="list-style-type: none">• Developing HIPPA-compliant web applications for managing thousands of imaging studies and tracking custom image analysis results• Engineering a solution to provide researchers with single-point de-identified access to clinical data hosted on a variety of systems across the institution• Utilizing machine learning and computer vision techniques to derive advanced measures of cardiac function from routine cardiac MRI datasets• Mining 15 years of longitudinal clinical data to classify patients and predict outcomes• Working closely with the Information Security Office, and IT Compliance to ensure that the technical needs of Research are met while adhering to institutional policies• Systems Administrator for all servers and applications used by the group Research Assistant Professor JUL. 2014 - DEC. 2014 <i>Cardiac Imaging Research Lab, University of Kentucky, Lexington, KY</i> <ul style="list-style-type: none">• Combined continuum mechanics and image processing to develop a robust pipeline for processing 3D displacement-encoded MRI data to assess heart function• Created methodology for validating <i>in-vivo</i> measurements of cardiac displacements• Released open source tools for analysis of displacement-encoded MRI data Post-Doctoral Scholar JUL. 2013 - JUN. 2014 <i>Cardiac Imaging Research Lab, University of Kentucky, Lexington, KY</i> <ul style="list-style-type: none">• Developed a comprehensive image processing application used daily by all lab members with a custom plugin architecture for simple user customization• Designed and administered a 50TB server with incremental backups for housing all research data and hosting internal web applications• Worked closely with graduate students to understand the physics behind displacement-encoded MRI acquisitions and optimize parameters for all imaging studies• Utilized advanced image processing and image acquisition techniques to answer clinical questions pertaining to pediatric obesity and congenital heart disease

<p>WORK EXPERIENCE (CONTINUED)</p>	<p>Image Processing Consultant MAR. 2013 - JUL. 2013 <i>Scientific Imaging and Visualization, LLC, Atlanta, GA</i></p> <ul style="list-style-type: none"> • Developed and implemented algorithms for automated tracking of cardiac motion • Designed and delivered a custom user interface for visualizing cardiac motion <p>Independent Web Developer JAN. 2013 - PRESENT</p> <ul style="list-style-type: none"> • Created websites and custom web applications for individuals and businesses • Managed deployments on both shared hosting and virtual private servers • Performed search engine optimization to improve site visibility <p>Graduate Research Assistant JUL. 2008 - JUL. 2013 <i>Georgia Institute of Technology & Emory University, Atlanta, GA</i></p> <ul style="list-style-type: none"> • Developed a novel method for detecting dyssynchrony from MR images of the heart • Registered biplane X-ray Angiography and MR images of the coronary veins and performed validation using a custom 3D-printed coronary vein phantom • Conducted a clinical study to determine the effect of scar tissue, mechanical dyssynchrony, and coronary vein anatomy on patient response to pacemaker therapies • Helped to create a robust method for registering longitudinal IVUS datasets • Employed PDE-based image processing techniques to characterize mouse plaques • Served as a mentor for three undergraduate researchers <p>Teaching Assistant - Capstone Design JAN. 2010 - DEC. 2010 <i>Department of Biomedical Engineering, Georgia Institute of Technology, Atlanta, GA</i></p> <ul style="list-style-type: none"> • Mentored 16 groups in the design, prototyping, and testing of biomedical devices • Provided constructive feedback on project reports and 510(k) submissions <p>Undergraduate Research Assistant JAN. 2007 - JUL. 2008 <i>University of Alabama at Birmingham, Birmingham, AL</i></p> <ul style="list-style-type: none"> • Designed and performed computational molecular dynamics simulations to study the interaction of key proteins involved in the apoptotic pathway of osteoclasts • Leveraged an IBM Blue Gene supercomputer to solve parallelizable problems
<p>THESES</p>	<p>Ph.D. Dissertation (2013) - MRI Methods for Predicting Response to Cardiac Resynchronization Therapy</p> <ul style="list-style-type: none"> • Designed the methods and software required to assess scar burden, mechanical dyssynchrony, and coronary vein anatomy in the heart from MRI images and studied the effect of these various factors on patient response to biventricular pacemakers. <p>B.S. Honors Thesis (2008) - Conformation and Free Energy Analyses of the Complex of Ca²⁺-Bound Calmodulin and the Fas Death Domain</p> <ul style="list-style-type: none"> • Performed molecular dynamics simulations to characterize the interactions between mutated versions of two proteins that are crucial in regulating bone density.
<p>AWARDS</p>	<ul style="list-style-type: none"> • <i>Society of Cardiovascular MRI</i>, Regional Scholarship, 2014. \$1,000 • <i>National Science Foundation</i>, Graduate Research Fellowship, 2010 - 2013. \$90,000 • <i>Georgia Institute of Technology</i>, President's Fellowship, 2008 - 2012. \$20,000 • <i>University of Pittsburgh</i>, Mr. & Mrs. Kwok-Chong Woo Grant, 2007. \$5,000 • <i>Univ. of Alabama at Birmingham</i>, Jane Knight Lowe Scholarship, 2004 - 2008. \$40,000
<p>PROFESSIONAL DEVELOPMENT</p>	<ul style="list-style-type: none"> • Open Source Developer: <i>MATL-Online</i> (creator, 2015), <i>DENSEanalysis</i> (development lead since 2014), <i>pydicom</i> (contributor since 2012), <i>DICOMSort</i> (creator, 2011) • Community Contributor - 2015 - Present: <i>Stack Overflow</i> (<i>stackoverflow.com</i>) • Reviewer - 2015 - Present: <i>Journal of the American College of Cardiology: Cardiovascular Imaging</i>, <i>Journal of Cardiovascular Magnetic Resonance</i>, <i>Nuclear Magnetic Resonance in Biomedicine</i> • Programming Book Reviewer - 2013 - Present: <i>Manning Publications, Co.</i> • Social Chair - 2011 - 2012: <i>Bioengineering and Bioscience Unified Graduate Students</i> • Member - 2008 - Present: <i>International Society for Magnetic Resonance in Medicine</i> • Member - 2008 - Present: <i>Society for Cardiovascular Magnetic Resonance</i> • Webmaster - 2007 - 2008: <i>UAB Undergraduate Student Government Association</i> • Webmaster - 2005 - 2008: <i>Habitat for Humanity, UAB Chapter</i>