Jerome E. Mitchell
email: jerome.e.mitchell@gmail.com

Field Experience

United States Antarctic Program Dec 2005 – Jan 2006
Antarctica – West Antarctica Ice Sheet (WAIS) Divide Core Site
Project: High Resolution Ice Thickness and Plane Wave Mapping of Near-Surface Layers (NSF I- 346)

Education

Doctor of Philosophy 2010 - Current
Computer Science
Indiana University

Master of Science 2010
Computer Science
The University of Kansas

Bachelor of Science 2007
Computer Science
Elizabeth City State University

Research Experience

PolarGrid Aug 2010 - Current
Indiana University

-- Develop data-parallel techniques for signal processing algorithms in order to support high performance post analysis in field campaigns in Greenland and Antarctica

-- Develop machine learning algorithms for automating bed and internal layer interfaces in ice sheet data

FutureGrid Aug 2010 – Aug 2012
Indiana University
-- Offer assistance to FutureGrid users on the use of high performance computing clusters, cloud computing platforms, such as Eucalyptus and Nimbus, and distributed computing runtimes, such as Hadoop and Twister

Center for Remote Sensing of Ice Sheets Jun 2007 – Jul 2010
University of Kansas
-- Developed and maintained a front - and back - end plane wave RADAR software for operation of Greenland and Antarctica field campaigns

Institute for the Study of Earth, Ocean, and Space Jun 2006 – Aug 2006
University of New Hampshire
-- Used mathematical techniques to determine the number of melt days in Greenland between 1992 and 2005
--Greenland Special Sensor Microwave Imager (SSM/I) passive microwave brightness temperature images of Greenland from mathematical techniques in MATLAB

Center for Excellence in Remote Sensing Education and Research Aug 2003 – May 2007
Elizabeth City State University
-- Initiated remote sensing projects geared toward studying the effects of ice sheets in Antarctica and Greenland

Service Experience

Research Experience for Undergraduates
Mentor
Jun 2012 – Aug 2012
Students: 2 undergraduates (1: Spelman College, 1: Jackson State University
Project: "Spectroscopic Image Signatures Classification of Land Cover Types using Multi-Spectral Data within a Neural Network"

Students: 5 undergraduates (4: The University of Ghana, 1: Elizabeth City State University)
Project: "The Development of an Autonomous Sea Surface Vehicle (ASV)"

"A Cloudy View on Computing" Workshop
Facilitator and Organizer Jun 2011
-- Provided a 'teach one – teach many' online curriculum for 15 ADMI and A4RC faculty members on the importance of parallel and distributed computing

--Developed Hadoop and Twister educational virtual appliances to support science applications for participant's courses

Communication Skills

Journal and Book Chapters
C.M. Gifford, Jerome E. Mitchell, and A. Agah, "A Java Approach to Robotics and Artificial Intelligence," In Mattis Hayes and Isaiah Johansen (Ed.), Java Software and Embedded Systems, Chapter 6, pp. 123-141, ISBN: 978-1-6071-661-6.

Referred Conference Papers
Jerome E. Mitchell, David J. Crandall, Geoffrey C. Fox, and Maryam Rahnemoonfar, and John D. Paden, "A Semi-Automated Approach for Estimating Bedrock and Surface Layers from Multichannel Coherent Radar Depth Sounder Imagery," in SPIE Remote Sensing. International Society for Optics and Photonics, 2013.

Jerome E. Mitchell, David J. Crandall, Geoffrey Fox, and John D. Paden. “A Semi-Automated Approach for Estimating Near Surface Internal Layers from Snow Radar Imagery.” International Geoscience and Remote Sensing Symposium (IGARSS), 2013.

Jerome E. Mitchell, et al. “FutureGrid Education: Using Case Studies to Develop a Curriculum for Communicating Parallel and Distributed Computing Concepts.” Extreme Science and Engineering Discovery Environment, 2012.

Teaching

-- Used Google’s massively open courseware to provide lectures on the use of clouds running data analytics collaboratively for processing Big Data to solve problems in radar-informatics

Awards

NASA Earth and Space Science Fellowship, 2013. Proposal: “Developing Machine Learning Algorithms to Assess Bedrock and Internal Layers in Polar Radar Imagery.” Total: 29,856.