
EUGENE BREVDO

ebrevdo@princeton.edu
U.S. Citizen

ACADEMIC EXPERIENCE

- 2005-Present **Ph.D. Candidate, Department of Electrical Engineering, Princeton University**
Advisors: Peter Ramadge, Ingrid Daubechies
Coursework: Random Processes, Linear Systems Theory, Information Theory, Detection and Estimation, Real Analysis, Artificial Intelligence
Research Interests:
- Unsupervised and semi-supervised classification and manifold learning methods for dimensionality reduction of noisy signals.
 - Texture analysis, classification, and segmentation via Wavelet decompositions and Bayesian Network models.
 - Applications of these methods for the analysis of functional MRI signals (mapping brain response to cognitive states) and for forgery detection in art.
- 2001-2005 **Electrical, Computer, and Systems Engineering, Rensselaer Polytechnic Institute**
Bachelor of Science in Computer Systems Engineering
GPA: 4.00/4.00
Senior Project (Advisor: Richard Radke)
- Design and analysis of an image processing system for the automated classification of small factory floor parts, such as fasteners.

RESEARCH AND PROFESSIONAL EXPERIENCE

- Summers,
2004-2005 **Air Force Research Laboratories, Maui Optical and Supercomputing Site, Hawaii**
Summer Research Intern
Advisors: Kim Luu, Chris Sabol
- Studied the spectral unmixing problem for classification of hyperspectral data in the case of “looking up” at small or distant satellites.
 - Designed algorithms for estimating the shape and material composition of such satellites (sub-pixel classification) using covariance estimates.
- Fall 2004-
Spring 2005 **Electrical Impedance Tomography (EIT) Research Group, Rensselaer Polytechnic**
Signal Analysis and Image Reconstruction, Undergraduate Research Project
Advisors: John Newell, David Isaacson, Gary Saulnier
- Implemented several real-time variants of the Newton One-Step Error Reconstructor (NOSER) algorithm for use with a hand-held probe. This probe is now in a study to determine its applicability to breast cancer detection.
 - Designed imaging subsystems in the PC reconstruction software for use with all EIT probes (including hand-held, mammography, and cylindrical geometries).
- Nov 2000-
Aug 2003 **Factset Research Systems, Greenwich CT and Boston MA**
Network Engineering Intern, Worked summers and part-time during the school year
- Ported the ‘Vision’ Object Oriented database system to Linux.
 - Designed and implemented a real-time network monitoring architecture, distributed network polling system, and web-based administrative interface.

AWARDS AND HONORS

2006	NSF Graduate Research Fellowship
2006	NDSEG (National Defense Science and Engineering Graduate) Fellowship
Aug 2005- Present	Gordon Wu Engineering Fellowship, Princeton University
2004-2005	NSF Computer Science, Engineering, and Mathematics Scholarship (CSEMS)
2003-2005	Linear Technology Corporation / Glenn Mueller '64 Memorial Scholarship
2001-2005	Dean's List, Rensselaer Polytechnic Institute

PUBLICATIONS AND PRESENTATIONS

E. Brevdo, K. Luu. "Improving the Hyperspectral Linear Unmixing Problem with Unsupervised Clustering and Covariance Estimates", SPIE Defense and Security Symposium, Orlando FL, April 2006.

H. Xia, A. S. Ross, **E. Brevdo**, T-J Kao, Ning Liu, B. S. Kim, J.C. Newell, G. J. Saulnier, D. Isaacson. "The Application software of ACT4." Conference on Biomedical Applications of Electrical Impedance Tomography, University College London, June 2005.

E. Brevdo, A. Hatch, D. Akman. "Efficient Fastener Comparison", Technical Report in partial fulfillment of Senior Signal Processing Design, Rensselaer Polytechnic Institute, December 2005.

J. Lambert, K. Luu, **E. Brevdo**. "Direct Inversion of Visible and Infrared Signatures", AMOS Technical Conference, Maui, September 2004.

G. Chen, J. Branch, **E. Brevdo**, L. Zhu, B. Szymanski. "SENSE: A Sensor Network Simulator", Rensselaer Polytechnic Institute Technical Reports, 2004.

SKILLS

Languages	English (native), Russian (native)
Development	C, C++, perl, Java, Eclipse, SQL, Matlab 7, LabVIEW 6.1, Emacs, vi, gdb, MS Visual Studio, Perforce, CVS, Subversion, some Python
Documentation	LaTeX, MS Office, doxygen, HTML/CSS/JavaScript

OTHER ACTIVITIES

Spring 2007 **Organizer**, Student-Run Information Sciences and Systems Seminar, Princeton University

INTERESTS

(Chi)Running, Ultimate Frisbee, Hiking, Short Fiction, Buddhism, The Game (at Princeton)