

Curriculum Vitae

Gregory A Book

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EDUCATION	University of Connecticut – Storrs, CT Dec 2010 Masters of Science – Biomedical Engineering, GPA 3.99 Thesis: Computational Evaluation of Aortic Valve Geometry University of Connecticut – Storrs, CT May 2002 BS in Engineering – Computer Science & Engineering
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PROFESSIONAL EXPERIENCE	Hartford Hospital – Hartford, CT Apr 2004 – Present <i>Imaging Analyst</i> – Olin Neuropsychiatry Research Center (Aug 2008 – Present) <ul style="list-style-type: none">• Performed analysis of fMRI data using statistical parametric mapping, group ICA, structural analysis including DTI• Created web-based system to automate the analyses applied to tens of thousands of fMRI datasets using SPM, Matlab, Perl, PHP, MySQL, AJAX, and the Sun Grid Engine• Built PACS-like MRI data storage system to store and distribute over 200,000 MRI datasets in Dicom, Nifti, & Analyze formats and do quality checks on data• Assisted with design of server cluster to manage 100TB of research data• Developed game of dominos, written in C++ and OpenGL, to be played simultaneously by participants in two different MRI scanners. Within the Department of Neurosurgery: (July 2010 – Present) <ul style="list-style-type: none">• Created surgical navigation plans using StealthVis mapping system and extracted stimulation coordinates from navigation system during awake craniotomies <i>EEG Lab Manager/RA</i> – Olin Neuropsychiatry Research Center (Apr 2004 – Aug 2008) <ul style="list-style-type: none">• Managed EEG lab, including hiring and managing 3 research assistants. Performed EEGs/ERPs on subjects• Used Matlab, C++, and Perl to create internal applications to analyze MRI data• Wrote abstracts and manuscripts from analyzed data• Created automated system for generating ERP analyses with Perl/ERPSS• Performed MRIs on Seimens Allegra 3T scanner, performed maintenance on scanner, created pulse sequences• Taught other RAs Perl, Matlab, bash and other programming concepts Travelers Insurance – Hartford, CT May 1999 – Apr 2004 <i>Software Engineer</i> <ul style="list-style-type: none">• Created application in C++ for creating maps from geospatial data• Created geolocation/geographic search utility to replace \$250,000/yr application• Created application to convert Word documents into single PDF document• Database maintenance, Perl scripts, ASP applications against SQL Server database
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Web Development Services – New York, NY

Dec 1998 – Jan 2002

Webmaster/Programmer

- Created WebOffice virtual office using Perl and Apache on a Unix system; with login, scheduler, calendar, address book, admin functions, file manager, email system
- Designed Oracle database, multi-office support, server security

University of Connecticut – Storrs, CT

Sep 2000 – May 2001

Tutor – School of Engineering

- Tutored students in upper-level computer science, chemistry, and math courses

University of Connecticut – West Hartford, CT

Apr 2004 – Present

Computer Technician – MBA Program

- Maintained MBA program's database application, computers, and projectors
- Migrated printed forms into Word documents for mail merge through VB

PUBLICATIONS

- **Book GA**, Wang Q, Ortiz S, Primiano C, McKay R, Sun W, *Dimensional Analysis of Aortic Valve Geometry from Clinical 64-Slice MSCT Scans: A Comparison of Methods*, Submitted to The Journal of Heart Valve Disease, December 2010
- Andrews MM, Meda SA, Thomas AD, Potenza MN, Krystal JH, Worhunsky P, Stevens MC, O'Malley S, **Book GA**, Reynolds B, Pearlson GD., *Individuals Family History Positive for Alcoholism Show Functional Magnetic Resonance Imaging Differences in Reward Sensitivity That Are Related to Impulsivity Factors*, Biological Psychiatry, in press
- Tolin DF, Kiehl KA, Worhunsky P, **Book GA**, Maltby N., *An exploratory study of the neural mechanisms of decision making in compulsive hoarding*, Psychological Medicine, 2009. 39(2): p. 325-326

CONFERENCE
ABSTRACTS

- **G.A. Book**, M.C. Stevens, G. Pearlson, K.A. Kiehl - *Fusion of fMRI and the Pupil Response During an Auditory Oddball Task* - 2008 Conference of the Cognitive Neuroscience Society
- L.A. Miller, M. Assaf, **G.A. Book**, G. Pearlson - *Face Building: An fMRI investigation of brain activation of faces versus houses, objects, and patterns in individuals with high functioning autism* - 2008 Conference of the Cognitive Neuroscience Society
- **G.A. Book**, A.D. Thomas, M.R. Johnson, J.L. Hylton, M.M. Andrews, M. Assaf, G.D. Pearlson. - *Reward Processing in Social Competitive Task in Subjects with Familial History of Alcoholism* - International Conference on Applications of Neuroimaging to Alcoholism (ICANA) January 2008
- M. M. Andrews, S. A. Meda, **G. Book**, J. L. Hylton, A. D. Thomas, M. Potenza, P. Worhunsky, M. C. Stevens G. D. Pearlson - *Differences In Reward Circuit Activation In People With a Family History Of Alcoholism* - International Conference on Applications of Neuroimaging to Alcoholism (ICANA) January 2008
- A. L. Byrd, M. S. Shane, **G. A. Book**, E. Mulder, R. E. Kahn, O. Antonenko, K. A. Kiehl - *Response Inhibition as a Protective Factor against Incarceration in Those High and Low in Psychopathic Traits* - Presented at the April 2007 conference of the Society for the Scientific Study of Psychopathy (SSSP)

PRESENTATIONS

- *Migraine Pathogenesis* – **Gregory A Book**. Presented at Olin Data Talks September 25, 2007

- *Putting Neurobiological Models of OCD to the Test - An fMRI Study of Specificity and Response to Treatment* – Nicholas Maltby, Patrick Worhunsky, **Gregory A. Book**, Kent A. Kiehl, David F. Tolin
- *Introduction to Perl Programming* – **Gregory A Book**. Presented at Olin Center, August 2006

AWARDS

- fMRI of Brain Activation During Menstrual Migraine – Departmental award from Olin Center, July 2006

PROJECTS

Aortic Valve Models from 64-slice Cardiac CT Data – UConn Master’s Thesis

Used active appearance models and high dimensional warping to extract FEMs of valve surfaces and find differences in shape.

Medical Image Viewer (MIView) – Independent project - <http://gbooksoft.com>

Created an open source, multi-threaded medical image viewer in C++ to view and manipulate DICOM, Analyze, and Nifti formats. Implemented using OpenGL, GLSL, wxWidgets. Implemented volume rendering, maximum intensity projection, and 4D views.

MRI Data Request System – Olin Neuropsychiatry Research Center

System used to reconstruct data from the MRI scanner into several data formats for use in SPM and other analyses. Created a web based, PACS-like storage and data request system for users to search and request over 13TB (90,000,000 files) of MRI data.

fMRI study of Menstrual Migraine – Olin Neuropsychiatry Research Center

Began a project studying cortical spreading depression (CSD) at the onset of migraine in women. Created high-resolution 128x128x34 slice EPI pulse sequence and fMRI experiment. Awarded \$8,955 to scan 15 subjects.

Eye-Gaze Tracking System – UConn, senior project

Designed and implemented simple gaze tracking system. Built the camera apparatus and wrote multithreaded interface program. Developed basic iris-finding algorithm

SKILLS

Concepts: Surgical navigation systems · fMRI analysis · EEG/ERP analysis · pupillary response and eye gaze analysis · data analysis using ICA & PCA · Management skills · Image analysis · Experimental design · Engineering methods · Diagnostic/analytic skills · Teaching/mentoring skills · Large-scale software engineering · MRI/medical imaging principles · IRB process · 3D graphics programming · PACS

Software: Windows · Linux · Solaris · MS Office · Visual C++ · IIS · Apache · Matlab · SQL Server · Oracle · DirectX SDK · MySQL · Visual Studio.Net · PageMaker · SPM · VAPP/CIRC · ERPSS · digitize · E-prime · Presentation · IDS5 · HyperMesh

Programming Languages: C · C++ · Visual Basic · Perl · CGI · VB.Net · ASP · .Net · SQL · HTML · JavaScript · Pascal · Java · OpenGL · MFC · PostScript · PHP · Matlab · IDL · wxWidgets · GL Shading Language · HLSL · Cg · AJAX · VTK

TELEVISION

“Most Evil”, EEG Technician – Aired on Discovery Channel, July 2006

APPEARANCES

“Addicted to Hoarding”, MRI Operator – Aired on ABC Good Morning America Weekend, February 2006