

ARCHANA VENKATARAMAN

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EDUCATION

Massachusetts Institute of Technology, Cambridge, MA

Ph.D. Candidate, Electrical Engineering Sept 2007 - Present
Thesis Supervisor: Prof. Polina Golland
Concentration: Biomedical Imaging
GPA: 5.0/5.0

M. Eng., Electrical Engineering Sept 2006 - Sept 2007
Thesis Title: Signal Approximation using the Bilinear Transform
Thesis Supervisor: Prof. Alan V. Oppenheim
GPA: 5.0/5.0
GRE Quantitative: 800/800 Verbal: 750/800 Analytical Writing: 5.5/6.0

S.B., Electrical Engineering Sept 2003 - June 2006
Concentration: Communications, Controls and Signal Processing
GPA: 5.0/5.0

RESEARCH AND PROFESSIONAL EXPERIENCE

MIT Medical Vision Group, Cambridge MA Jan 2008 - Present

Faculty Supervisor: Prof. Polina Golland

- *Joint Generative Models for Combined Analysis of fMRI and DWI*
- *Robust Feature Selection in fMRI for Patient Classification*
- *Data-Driven Functional Connectivity Analysis*

MIT Digital Signal Processing Group, Cambridge MA Jan 2006 - Sept 2007

Faculty Supervisor: Prof. Alan V. Oppenheim

- *Signal Approximation using the Bilinear Transform*

MIT Lincoln Laboratory, Lexington MA June 2006 - Aug 2006

Advanced Sensor Techniques Group

Supervisor: Dr. Andrew McKellips

- *Adaptive IIR Nulling Solution for a Sparse Non-Commutative Environment*

MIT Microsystems Technology Laboratory, Cambridge MA Sept 2004 - Jan 2006

Faculty Supervisor: Prof. Anantha P. Chandrakasan

- *A Low-Power Integrated Switched-Capacitor DC-DC Power Converter*
- *A Low-Power Sensing Front End (w/Naveen Verma)*

Xerox Corporation, Rochester NY June 2004 - Aug 2004

XCEL Summer Internship Program

- Developed software additions for an online hardware management tool
- Programming Languages: Unix, Java, Excel
- Completed the Lean Six Sigma Yellow Belt training program

MIT Nanostructures Laboratory, Cambridge MA Sept 2003 - June 2004

Faculty Supervisor: Prof. Henry I. Smith

- *Fabrication of a 2D Photonic Crystal (w/Minghao Qi)*

PUBLICATIONS

- A. Venkataraman**, Y. Rathi, M. Kubicki, C-F. Westin and P. Golland. *Joint Generative Model for fMRI/DWI and its Application to Population Studies*. Accepted for Oral Presentation in Proc. MICCAI: International Conference on Medical Image Computing and Computer Assisted Intervention, 2010.

- A. Venkataraman**, M. Kubicki, C-F. Westin and P. Golland. *Robust Feature Selection in Resting-State fMRI Connectivity Based on Population Studies*. To appear in Proc. MMBIA: IEEE Computer Society Workshop on Mathematical Methods in Biomedical Image Analysis, 2010.
- K.R.A. Van Dijk, T.Hedden, **A. Venkataraman**, K.C. Evans, S.W. Lazar and R.L. Buckner. *Intrinsic Functional Connectivity As a Tool For Human Connectomics: Theory, Properties, and Optimization*. Journal of Neurophysiology, 103(1):297-321, 2010.
- A. Venkataraman**, K.R.A Van Dijk, R.L. Buckner and P. Golland. *Exploring Functional Connectivity in fMRI via Clustering*. In Proc. ICASSP: IEEE International Conference on Acoustics, Speech and Signal Processing, 441-444, 2009.
- P. Golland, D. Lashkari and **A. Venkataraman**. *Spatial Patterns and Functional Profiles for Discovering Structure in fMRI Data*. Invited paper. In Proc. Asilomar Conference on Signals, Systems and Computers, 1402-1409, 2008.
- A. Venkataraman** and A.V. Oppenheim, *Signal Approximation using the Bilinear Transform*, In Proc. ICASSP: IEEE International Conference on Acoustics, Speech and Signal Processing, pp.3729-3732, 2008.

AWARDS AND HONORS

National Defense Science and Engineering Graduate Fellowship (NDSEG)	2007-2010
Siebel Scholarship (\$20,000)	2007-2008
MIT Provost Presidential Fellowship	2006-2007
Morris Joseph Levin Award, Best Thesis Presentation (M.Eng.)	May 2007
Association of MIT Alumnae, Senior Academic Achievement Award (\$500)	May 2006
Xerox Technical Minority Scholarship (\$10,000)	Jan 2006
Maletta Foundation Scholarship, Rochester Engineering Society (\$2500)	Jan 2005
Semiconductor Research Corporation Undergraduate Research Award (\$18,000)	2004-2005
Xerox Technical Minority Scholarship (\$2,500)	Dec 2004
National Merit Scholarship (\$2,500)	Sept 2003

TECHNICAL PRESENTATIONS

Oral Presentations

- International Conference on Medical Image Computing and Computer Assisted Intervention (Sept 2010)
Joint Generative Model for fMRI/DWI and its Application to Population Studies
- Masterworks Symposium, MIT (May 2007)
M.Eng. Thesis Work: *Signal Approximation Using the Bilinear Transform*
Won Best Thesis Presentation Award

Poster Presentations

- IEEE Computer Society Workshop on Mathematical Methods in Biomedical Image Analysis (June 2010)
Robust Feature Selection in Resting-State fMRI Connectivity Based on Population Studies
- Annual Meeting of the Organization of Human Brain Mapping (June 2009)
Exploring Functional Connectivity in fMRI via Clustering
- IEEE International Conference on Acoustics, Speech and Signal Processing (April 2009)
Exploring Functional Connectivity in fMRI via Clustering
- IEEE International Conference on Acoustics, Speech and Signal Processing (April 2009)
Signal Approximation Using the Bilinear Transform
- Interconnect Focus Center Design Review, Atlanta, GA (Nov 2005)
An Integrated Low-Power Switched-Capacitor DC-DC Power Converter

PROFESSIONAL ACTIVITIES

- Reviewer for the International Conference on Medical Image Computing and Computer Assisted Intervention, the IEEE Conference on Computer Vision and Pattern Recognition and the European Conference on Computer Vision
- Siebel Scholar (2007 - Present)
- IEEE Student Member (2006 - Present)

Medical Image Computing and Computer Assisted Intervention, Student Member (2008 - Present)
Organization of Human Brain Mapping (2009 - Present)
Tau Beta Pi, Engineering Honor Society (2006 - Present)
Eta Kappa Nu, EE Honor Society (2006 - Present)
National Society of Collegiate Scholars (2006 - Present)

NON-PROFESSIONAL ACTIVITIES, TEACHING AND LEADERSHIP ROLES

Ashdown Residential Scholar Coordinator (MIT) <ul style="list-style-type: none">• <i>Coordinated activities with members of the MIT Humphrey fellowship program</i>• <i>Organized yoga and pilates seminars for Ashdown graduate students</i>• <i>Reinvigorated weekly dorm-wide social event</i>	June 2009 - June 2010
President, Ashdown House Executive Committee (MIT) <ul style="list-style-type: none">• <i>Coordinated the move of 200+ graduate students between dormitory buildings</i>• <i>Helped re-establish the 75 year old Ashdown community in a new building</i>• <i>Supervised 40+ graduate student officers within the dorm</i>	June 2008 - June 2009
Living Things Officer, Ashdown House (MIT)	Jan 2006 - June 2008
Member, Boston Open Committee (Cambridge, MA) <ul style="list-style-type: none">• <i>Coordinate annual Boston Open (professional-level) badminton tournament at MIT</i>	Sept 2004 - June 2008
Honor Society Leadership (MIT) <ul style="list-style-type: none">• <i>Eta Kappa Nu: Eligibles Chair</i>• <i>Tau Beta Pi: Leonardo Dinner Co-Chair</i>	Feb 2006 - Apr 2007
Instructor, Eta Kappa Nu (MIT) <ul style="list-style-type: none">• <i>Co-developed an introductory signals and systems course for sophomores</i>	Jan 2006
Treasurer and Co-Captain, MIT Badminton Club	June 2005 - June 2006
Executive Board Member, MIT Hindu Students Council	Jan 2005 - June 2006
Volunteer, CASPAR Homeless Shelter (Cambridge, MA)	Jan 2006

SKILLS

Language: Proficient in French
Operating Systems: Windows, Linux, Unix, Mac
Software: MATLAB, Mathematica, Maple, LaTeX, Cran-R

HOBBIES AND INTERESTS

Wildlife · Badminton · Running · Cooking/Baking · Travel