Amod Jog | Curriculum Vitae

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Education

2009–present: Doctor of Philosophy in Computer Science
The Johns Hopkins University (JHU), Baltimore
Thesis Title: Image Synthesis in Magnetic Resonance Neuroimaging
Advisor: Dr. Jerry L. Prince

2009–2011: Master of Science and Engineering in Computer Science
The Johns Hopkins University (JHU), Baltimore
GPA: 3.87/4

2005–2009: Bachelor of Technology in Computer Science and Engineering
Indian Institute of Technology Bombay (IITB), Mumbai, India
GPA: 8.69/10

Research Experience

2016–pres: Postdoctoral Fellow
Image Analysis and Communications Laboratory

2012–2016: Research Assistant
Image Analysis and Communications Laboratory

2009–2011: Research Assistant
Visual Imaging and Surgical Robotics

2010: Research Intern, Medical Research Group
Intuitive Surgical, Sunnyvale

2008: Research Intern
Rutgers University, Piscataway, NJ

Thesis

2016 : Jog, Amod. "Image Synthesis in Magnetic Resonance Neuroimaging". PhD. Baltimore, USA: The Johns Hopkins University.

Journal Publications

2017 : Chen, Min, Aaron Carass, Amod Jog, Junghoon Lee, Snehashis Roy, and Jerry L. Prince. "Cross contrast multi-channel image registration using image synthesis for MR brain images". In: *Medical Image Analysis* 36, pp. 2 –14.

2017 : Jog, Amod, Aaron Carass, Snehashis Roy, Dzung L. Pham, and Jerry L. Prince. "Random forest regression for magnetic resonance image synthesis". In: *Medical Image Analysis* 35, pp. 475

–488.

2015 : Jog, Amod, Aaron Carass, Snehashis Roy, Dzung L. Pham, and Jerry L. Prince. "MR image synthesis by contrast learning on neighborhood ensembles". In: *Medical Image Analysis* 24.1, pp. 63 –76.

2015 : Mendrik, Adriënne M, Koen L Vincken, Hugo J Kuijf, Marcel Breeuwer, Willem H Bouvy, Jeroen de Bresser, Amir Alansary, Marleen de Bruijne, Aaron Carass, Ayman El-Baz, et al. "MRBrainS Challenge: Online Evaluation Framework for Brain Image Segmentation in 3T MRI Scans". In: *Computational Intelligence and Neuroscience*.

2012 : Curry, Martin, Anand Malpani, Ryan Li, Thomas Tantillo, Amod Jog, Ray Blanco, Patrick K Ha, Joseph Califano, Rajesh Kumar, and Jeremy Richmon. "Objective assessment in residency-based training for transoral robotic surgery". In: *The Laryngoscope* 122.10, pp. 2184–2192.

2012 : Kumar, Rajesh, Amod Jog, Anand Malpani, Balazs Vagvolgyi, David Yuh, Hiep Nguyen, Gregory Hager, and Chi Chiung Grace Chen. "Assessing system operation skills in robotic surgery trainees". In: *The International Journal of Medical Robotics and Computer Assisted Surgery* 8.1, pp. 118–124.

2012 : Kumar, Rajesh, Amod Jog, Balazs Vagvolgyi, Hiep Nguyen, Gregory Hager, Chi Chiung Grace Chen, and David Yuh. "Objective measures for longitudinal assessment of robotic surgery training". In: *The Journal of Thoracic and Cardiovascular Surgery* 143.3, pp. 528–534.

Conference Publications

2016 : Jog, Amod, Aaron Carass, and Jerry L Prince. "Self Super-Resolution for Magnetic Resonance Images". In: *International Conference on Medical Image Computing and Computer-Assisted Intervention*. Springer International Publishing, pp. 553–560.

2016 : Roy, Snehashis, Yi-Yu Chou, Amod Jog, John A Butman, and Dzung L Pham. "Patch Based Synthesis of Whole Head MR Images: Application To EPI Distortion Correction". In: *International Workshop on Simulation and Synthesis in Medical Imaging*. Springer International Publishing, pp. 146–156.

2016 : Zhao, Can, Aaron Carass, Amod Jog, and Jerry L Prince. "Effects of spatial resolution on image registration". In: *SPIE Medical Imaging*. International Society for Optics and Photonics, 97840Y–97840Y.

2015 : Chen, Min, Amod Jog, Aaron Carass, and Jerry L. Prince. "Using image synthesis for multi-channel registration of different image modalities". In: vol. 9413, 94131Q–94131Q–7.

2015 : He, Qing, Snehashis Roy, Amod Jog, and Dzung L Pham. "An example-based brain MRI simulation framework". In: *SPIE Medical Imaging*. International Society for Optics and Photonics,

94120P–94120P.

2015 : Jog, Amod, Aaron Carass, Dzung L Pham, and Jerry L Prince. "Multi-output decision trees for lesion segmentation in multiple sclerosis". In: *SPIE Medical Imaging*. International Society for Optics and Photonics, pp. 94131C–94131C.

2015 : Jog, Amod, Aaron Carass, Dzung L. Pham, and Jerry L. Prince. "Tree-Encoded Conditional Random Fields for Image Synthesis". In: *Information Processing in Medical Imaging*. Ed. by Sebastien Ourselin, Daniel C. Alexander, Carl-Fredrik Westin, and M. Jorge Cardoso. Vol. 9123. Lecture Notes in Computer Science. Springer International Publishing, pp. 733–745.

2015 : Roy, Snehashis, Amod Jog, Elizabeth Magrath, John A Butman, and Dzung L Pham. "Cerebral microbleed segmentation from susceptibility weighted images". In: *SPIE Medical Imaging*. International Society for Optics and Photonics, 94131E–94131E.

2014 : Jog, Amod, Aaron Carass, Dzung L. Pham, and Jerry L. Prince. "Random forest FLAIR reconstruction from T1, T2, and PD-weighted MRI". In: *Biomedical Imaging (ISBI), 2014 IEEE 11th International Symposium on*, pp. 1079–1082.

2014 : Jog, Amod, Aaron Carass, and Jerry L. Prince. "Improving magnetic resonance resolution with supervised learning". In: *Biomedical Imaging (ISBI), 2014 IEEE 11th International Symposium on*, pp. 987–990.

2014 : Roy, Snehashis, Aaron Carass, Amod Jog, Jerry L Prince, and Junghoon Lee. "MR to CT registration of brains using image synthesis". In: *SPIE Medical Imaging*. International Society for Optics and Photonics, pp. 903419–903419.

2014 : Roy, Snehashis, Qing He, Aaron Carass, Amod Jog, Jennifer L Cuzzocreo, Daniel S Reich, Jerry Prince, and Dzung Pham. "Example based lesion segmentation". In: *SPIE Medical Imaging*. International Society for Optics and Photonics, 90341Y–90341Y.

2013 : Jog, A., S. Roy, A. Carass, and J. L. Prince. "Magnetic resonance image synthesis through patch regression". In: *10th International Symposium on Biomedical Imaging (ISBI 2013)*, pp. 350–353.

2013 : Jog, Amod, Snehashis Roy, Aaron Carass, and Jerry .L Prince. "Pulse sequence based multi-acquisition MR intensity normalization". In: *Proceedings of SPIE Medical Imaging (SPIE-MI 2013), Orlando, FL, February 9-14, 2013*. Vol. 8669, 86692H–86692H–8.

2013 : Roy, Snehashis, Amod Jog, Aaron Carass, and Jerry .L Prince. "Atlas based intensity transformation of brain MR images". In: *3rd International Workshop on Multimodal Brain Image Analysis at the 16th International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI 2013)*, pp. 51–62.

2011 : Gao, Yixin, Mert Sedef, Amod Jog, Peter Peng, Michael Choti, Gregory Hager, Jeff Berkley, and Rajesh Kumar. "Towards validation of robotic surgery training assessment across training platforms". In: *Intelligent Robots and Systems (IROS), 2011 IEEE/RSJ International Conference on*. IEEE, pp. 2539–2544.

2011 : Jog, Amod, Brandon Itkowitz, May Liu, Simon DiMaio, Greg Hager, Myriam Curet, and Rajesh Kumar. "Towards integrating task information in skills assessment for dexterous tasks in surgery and simulation". In: *Robotics and Automation (ICRA), 2011 IEEE International Conference on*. IEEE, pp. 5273–5278.

2010 : Kazanzides, P, S DiMaio, A Deguet, B Vagvolgyi, M Balicki, C Schneider, R Kumar, A Jog, B Itkowitz, C Hasser, et al. "The Surgical Assistant Workstation (SAW) in minimally-invasive surgery and microsurgery". In:

2009 : Jog, Amod, Aniruddha J Joshi, Sharat Chandran, and Anant Madabhushi. "Classifying Ayurvedic Pulse Signals Via Consensus Locally Linear Embedding." In: *BIOSIGNALS*, pp. 388–395.

Patents

2013 : Jog, Amod, Snehashis Roy, Aaron Carass, and Jerry L Prince. *Pulse sequence-based intensity normalization and contrast synthesis for magnetic resonance imaging*. US Patent App. 13/940,578.

2012 : Kumar, Rajesh, Gregory D Hager, Amod S Jog, Yixin Gao, May Liu, Simon Peter DiMaio, Brandon Itkowitz, and Myriam Curet. *Method and system for analyzing a task trajectory*. US Patent App. 14/115,092.

2011 : Kumar, Rajesh, Gregory D Hager, Amod S Jog, and David D Yuh. *System and method for the evaluation of or improvement of minimally invasive surgery skills*. US Patent App. 13/883,516.

Achievements

- Received the Outstanding Teaching Award from Computer Science, 2012
- Secured an All India Rank of **52** in the Joint Entrance Examination (JEE) 2005 from over 200,000 candidates
- National Talent Search Merit Recipient, 2003

Teaching and Service

Teaching

Fall 2011: **Teaching Assistant**, CS. 464/664 Randomized Algorithms.
Instructor: Dr. S. Rao Kosaraju

- Graduate level class with 25 students
- Teaching, grading, formulating assignments and solutions

Spring 2012: **Teaching Assistant**, CS. 226 Data Structures.
Instructor: Dr. Greg Hager
- Head teaching assistant of a undergraduate level class with 60 students
- Managed a team of 6 course assistants for teaching, grading, assignments and solutions formulation

Service

2015–pre.: **Reviewer**, Transactions in Medical Imaging, NeuroImage, Medical Image Analysis, Frontiers in Neuroscience, MICCAI.

2009–2011: **System Administrator and Lab Manager**, Visual Imaging and Surgical Robotics Laboratory.

2009–2010: **Computer Science Representative**, Graduate Representative Organization.

2009–2010: **Indian Graduate Student Association Representative**, Graduate Representative Organization.

2009–2010: **Website Manager**, Indian Graduate Student Association.

2008–2009: **System Administrator**, Vision, Graphics, and Imaging Lab at IITB.

Skills

Languages: C, C++, Java, Python, MATLAB

Operating Systems: Linux (Debian/Fedora/Ubuntu based distributions), Windows, OS X

Word Prorcessing: LaTeX, MS Word

Packages: MIPAV, JIST, Slicer, Paraview

Other Interests

Languages: Marathi (Native), Hindi (Fluent), English (Fluent), Spanish (Basic), German (Basic)

Interests: Squash, Badminton, Yoga, Languages, History