Amod Jog

Curriculum Vitae

3400 N Charles Street
21218 Baltimore
USA
✉ *amodjog@jhu.edu*
🖥 *www.iacl.ece.jhu.edu/Amod*
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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

2012–present 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

Journal Publications

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 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* Submitted.

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

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.

Thesis

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

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

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	**Reviewer**, Transactions in Medical Imaging.
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 (Debia/Fedora/Ubuntu based distributions), Windows, OS X
Word Prorcessing	LaTeX, MS Word	**Packages**	MIPAV, JIST, Slicer, Paraview

Languages

Marathi	**Native**
Hindi	**Fluent**
English	**Fluent**
Spanish	**Intermediate**
German	**Intermediate**

Interests

Sports:	Squash, Badminton, Yoga
Cultural	Languages, History, Fiction