Amir Alansary
PhD Student, Teaching Assistant
Department of Computing,
Imperial College London
Supervisor:
Prof. Daniel Rueckert

Contact Information
Address:
Department of Computing, Imperial College London
Huxley Building, South Kensington Campus
London SW7 2AZ, UK
Phone: +44 (750) 803-5132
E-Mail: a.alansary14@imperial.ac.uk

Personal Statement

I am a PhD student in the department of Computing at Imperial College London, UK. My general interests are in Deep Learning, Medical Imaging, and Computer Vision. My primary expertise is in 3D medical image analysis including segmentation, motion compensation, and super-resolution.

Education and Qualifications

2014-2017 (expected) **PhD Department of Computing, Imperial College London, UK**
The primary focus of my PhD project is to develop novel image segmentation and reconstruction techniques for motion-corrupted fetal MRI scans

2012-2014 **MSc. Electrical and Computer Engineering, University of Louisville, KY, USA**
Have enrolled in different courses and have achieved Excellent levels of performance with final GPA is 4.0/4.0. My master's thesis was about developing fast and robust hybrid framework for infant brain classification from structural MRI

2004-2009 **BSc. Electronics and Communications Engineering, Mansoura University, Egypt**
Achieved Excellent with Honors, ranked 3rd out of 250
Graduation project: *Eye Mouse*
A tracking system for eyes and gaze using a webcam to determine location of user's iris in relation to the rest of the eye, using this location to position a computer cursor, programmed in C++/OpenCV
Sponsor: *Intel* cooperation - Egypt

Work Experience

2014-2017 **Teaching Assistant, Department of Computing**
Imperial College London, UK
Projects:
[1] Fetal brain localization from MRI
[2] Fetal image reconstruction from motion corrupted images
[3] Automatic placenta segmentation
[4] Landmark detection in fetal images
[5] Multi-modality registration (MRI and Ultrasound)
Courses: (Teaching)
[1] Mathematical Models, Autumn 2015 & 2016
[2] Integrated Programming C++, Autumn 2015
[3] Computer Graphics, Spring 2015

2012-2014 **Research Assistant, BioImaging Lab, BioEngineering Department**
University of Louisville, Louisville, KY, USA
Projects:
[1] MR Brain Images Tissues Segmentation
Designed and Implemented a complete system to segment the different brain tissues white matter, gray matter, and cerebrospinal fluid using a MAP-based technique for MR

images based on visual appearance and shape priors, programmed in C++/MatLab

[2] Segmentation of Infant DTI MR Brain Images

Designed and Implemented a complete system to segment the brain tissue from DTI MR Brain Images using an Atlas--Based Approach, programmed in C++/MatLab

2009-2012 **Teaching Assistant, Electronics and Communications Engineering Dept.**
Mansoura University, Egypt

Assisted students in their classes and projects, and evaluated course work for Digital Signal Processing, Signal and Systems, Wireless Communications, Digital Image Processing, Programming with MATLAB for Engineers, and Computer Networks

2010-2011 **Image Processing Application Developer, Bookworm (Start Up Company), Mansoura, Egypt**

Participated in the design and implementation of a virtual library. Used a webcam to design a user-friendly software to provide an easy, time saving, and entertaining way to read books with a few hand moves, programmed in C++/OpenCV

2009-2010 **Image Processing Application Developer, Middle East Technology, Cairo, Egypt**

Participated in the design and implementation of a virtual changing room. Used an HD webcam to design a user-friendly software to enable customers try on many models with a few hand moves, programmed in C++/OpenCV

Publications (google scholar https://scholar.google.co.uk/citations?user=Sj11Jo8AAAAJ&hl=en)

2016

[1] **A. Alansary**, B. Kainz, M. Rajchl, M. Murgasova, M. Damodaram, D. F.A. Lloyd, A. Davidson, S. G. McDonagh, M. Rutherford, J. V. Hajnal, and D. Rueckert, "**PVR: Patch-to-Volume Reconstruction for Large Area Motion Correction of Fetal MRI**", (submitted to) IEEE Transactions on Medical Imaging, preprint available on arXiv:1611.07289, 2016

[2] **A. Alansary**, K. Kamnitsas, M. Rajchl, A. Davidson, C. Malamateniou, M. Rutherford, J. V. Hajnal, B. Glocker, D. Rueckert, and B. Kainz, "**Fast Fully Automatic Segmentation of the Human Placenta from Motion Corrupted MRI.**" *In MICCAI 2016*

[3] M. Rajchl, M. C.H. Lee, F. Schrans, A. Davidson, J. Passerat-Palmbach, G. Tarroni, **A. Alansary**, O. Oktay, B. Kainz, and D. Rueckert "**Learning under Distributed Weak Supervision**" *arXiv preprint arXiv:1606.01100, 2016*

[4] B. Kainz, D. FA Lloyd, **A. Alansary**, M. Murgasova, R. Khlebnikov, D. Rueckert, M. Rutherford, R. Razavi, J. V. Hajnal, "**High-Performance Motion Correction of Fetal MRI**", EuroRV3: EuroVis Workshop on Reproducibility, Verification, and Validation in Visualization, 2016

2015

[5] **A. Alansary**, M. Lee, k. Keraudren, B. Kainz, C. Malamateniou, M. Rutherford, J. Hajnal, B. Glocker, and D. Rueckert, "**Automatic Brain Localization in Fetal MRI Using Superpixel Graphs**," In *Machine Learning Meets Medical Imaging Workshop, ICML 2015*

[6] **A. Alansary**, M. Ismail, A. Soliman, F. Khalifa, M. Nitzken, A. Elnakib, M. Mostapha, A. Black, K. Stinebruner, M. Casanova, J.M Zurada, and A. El-Baz, "**Infant Brain Extraction in T1-weighted MR Images using BET and Refinement using LCDG and MGRF Models**," In *IEEE Journal of Biomedical and Health Informatics*, 2015

[7] A. M. Mendrik, K. L. Vincken, H. J. Kuijf, M. Breeuwer, W. H. Bouvy, J. d. Bresser, **A. Alansary** et. al. "**MRBrainS challenge: online evaluation framework for brain image segmentation in 3T MRI scans**." *Computational Intelligence and Neuroscience*, 2015

[8] B. Kainz, **A. Alansary**, C. Malamateniou, K. Keraudren, M. Rutherford, J. Hajnal, and D. Rueckert, "**Flexible reconstruction and correction of unpredictable motion from stacks of 2D images.**" In *MICCAI 2015*

2014 [9] **A. Alansary**, A. Soliman, M. Nitzken, F. Khalifa, A. Elnakib, M. F. Casanova, and A. El-Baz, "**An Integrated Geometrical and Stochastic Approach for Accurate Infant Brain Extraction**," In: *ICIP* 2014

[10] **A. Alansary**, "**Fast and robust hybrid framework for infant brain classification from structrual MRI: a case study for early diagnosis of autism**." *Master Thesis, University of Louisville*, 2014

[11] M. Mostapha, A. Soliman, F. Khalifa, A. Elnakib, **A. Alansary**, M. Nitzken, M. F. Casanova, and A. El-Baz. "**A statistical framework for the classification of infant DT images**." *In: ICIP* 2014

[12] M. Mostapha, **A. Alansary**, A. Soliman, F. Khalifa, M. Nitzken, M. Casanova, A. El-baz. "**Atlas-Based Approach for The Segmentation of Infant DTI MR Brain Images**," In: *Proc. ISBI* 2014

[13] M. Mostapha, F. Khalifa, **A. Alansary**, A. Soliman, G. J. Suri, and A. El-Baz, "**Computer Aided Diagnosis Systems for Acute Renal Transplant Rejection: Challenges and Methodologies**," In: *Abdomen and Thoracic Imaging,* pp. 1-35, Springer US, 2014

2013 [14] **A. Alansary**, A. Soliman, F. Khalifa, A. Elnakib, M. Mostapha, M. Nitzken, M. Casanova, A. El-Baz "**MAP–Based Framework for Segmentation of MR Brain Images Based on Visual Appearance and Prior Shape**," In: *MIDAS Journal* [online]. 2013. Available: *http://hdl.handle.net/10380/3440*

[15] A. Soliman, F. Khalifa, **A. Alansary**, G. Gimel'farb and A. El-Baz, "**Performance evaluation of an automatic MGRF-based lung segmentation approach**," *International Symposium on Computational Models for Life Science*, 2013

[16] M. Mostapha, F. Khalifa, **A. Alansary**, A. Soliman, G. Gimel'farb, and A. El-Baz, "**Dynamic MRI-Based Computer Aided Diagnostic System for Early Detection of Kidney Transplant Rejection: A Survey,**" *International Symposium on Computational Models for Life Science,* Sydney, Australia, vol. 1559, no. 1, pp. 297-306, November 27–29, 2013

[17] A. Soliman, F. Khalifa, **A. Alansary**, G. Gimel'farb and A. El-Baz, "**Segmentation of Lung Region Based on Using Parallel Implementation of Joint MGRF: Validation on 3D Realistic Lung Phantoms,**" In: *ISBI* 2013

Prizes and Awards

2015 [1] First place prize for Google Poster Competition of the best research for 1st year PhD students, department of computing, Imperial College London

2014 [2] Imperial College PhD Scholarship

[3] Theobald Scholarship Award in recognition of valuable contributions to Department of Electrical and Computer Engineering, University of Louisville

2013 [4] The first prize in the MICCAI Grand Challenge on MR Brain Image Segmentation (MRBrainS13) in Nagoya, Japan 2013. For developing a "MAP-Based Framework for Segmentation of MR Brain Images Based on Visual Appearance and Prior Shape"

2011 [5] Startup summer camp finals, Cairo, Egypt

2010 [6] Young Innovators Award (YIA) for engineering final year projects

2009 [7] The 5th rank of MIE (Made in Egypt) competition for graduations projects

[8] The first prize of MIE (Made in Egypt) Ethics completion for engineering projects

[9] Qualified for round-2, Microsoft Imagine Cup for Embedded Development

2006 [10] The prize of the first three candidates at the faculty of Engineering of Higher Education Enhancement Project Fund (HEEPF)

Peer-reviewed Presentations and Challenges

2013 [1] A. El-Baz, M. Nitzken, A. Soliman, **A. Alansary**, M. Mostapha, "**Tutorial on Stochastic Modeling for Medical Image Analysis,**" *In MICCAI'13*, Nagoya, Japan 2013 *https://louisville.edu/speed/bioengineering/faculty/bioengineering-full/dr-ayman-el-baz/miccai-tutorial.html*

[2] **A. Alansary**, "**MICCAI Grand Challenge on MR Brain Image Segmentation (MRBrainS13),**" *In MICCAI'13,* Nagoya, Japan 2013. *http://hdl.handle.net/10380/3440*

Patents & Disclosures

2013 [1] A. El-Baz, A. Soliman, **A. Alansary**, M. Nitzken, M. Casanova, "**Brain Segmentation Method for Young Children and Adults**," US Provisional Patent Application

Professional Activity

2013-2017 MICCAI Society Member
2013-2017 IEEE Signal Society Member
2011-2017 IEEE Student Member
2011-2012 IEEE Student's Mentor, IEEE Student Branch, Mansoura University, Egypt

Public Engagement

2016 [1] IC Scholars Symposium 2016
[2] Imperial College London Festival 2016
2015 [3] IC Scholars Symposium 2015
[4] Imperial College London Festival 2015

Technical Skills

Programming: Python, C/C++, CUDA, MatLab
Operating Systems: Linux Ubuntu, Windows
Languages: Arabic (Native), English (Fluent)

References:

Professor Daniel Rueckert, PhD, FREng, FIEEE
Room 568, Huxley Building
Department of Computing
Imperial College London

180 Queen's Gate
London SW7 2AZ, UK
Tel: +44 20 75948333
E-Mail: d.rueckert@imperial.ac.uk