

ARMAN ESHAGHI

PERSONAL INFORMATION

Born in Tehran, Iran 11 April 1988

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WORK EXPERIENCE

*UCL Institute of
Neurology & UCL
Department of
Computer Sciences*

June 2015–
July 2018 PhD Student - Computational Neuroscience
(*expected*)
DEPARTMENT OF NEUROINFLAMMATION, UCL INSTITUTE OF
NEUROLOGY AND UCL DEPARTMENT OF COMPUTER SCIENCE —
London, UK
Description: During my PhD I leverage big data analytics and image
processing to analyse MRI scans from patients with multiple sclerosis
from different parts of Europe. The main aims of my PhD are. :
1) To explore the longitudinal trajectory of brain atrophy calculated
from MR images
2) To define disease progression in MS using longitudinal imaging with
probabilistic data-driven models
Supervisors: Prof Olga Ciccarelli, Prof Alan J Thompson, and Prof
Daniel C Alexander Reference: Olga CICCARELLI · +44 203 448 4469 ·
o.ciccarelli@ucl.ac.uk

*Multiple Sclerosis
Research Centre*

September
2008– May Clinical Research Fellow, MULTIPLE SCLEROSIS
2015
RESEARCH CENTRE, TEHRAN UNIVERSITY OF MEDICAL SCIENCES —
Tehran, Iran
Description: I have been responsible for the follow-up of patients with
MS and imaging assessments, in addition to MRI analysis, preparing
manuscripts and publishing scientific papers.
Reference: Mohammad Ali SAHRAIAN · +98 (o) 216 634 8571 ·
msahrai@tums.ac.ir

*UCL Institute of
Neurology*

Spring 2012 Visiting Student, UCL INSTITUTE OF NEUROLOGY
— London, UK
Description: I learned fMRI psychological stimulus presentation to
patients, and prepared MRI scanning protocols for a project of cognitive
rehabilitation in Tehran. Moreover, I worked on Queen Square's
longitudinal cohort of patients with primary-progressive MS, where I
used tensor-based morphometry for longitudinal grey matter atrophy
analysis. The results of my work was published in Neuroimage journal.

Reference: Olga CICCARELLI · +44 203 448 4469 ·
o.cicarelli@ucl.ac.uk

EDUCATION

- PhD candidate* 2015-present University College London, London, UK
Department of Neuroinflammation · Institute of Neurology
- Medical Doctorate Degree* 2005-2012 Tehran University of Medical Sciences, Tehran, Iran
GPA: 17 out of 20 · School: Medical School
Thesis: *Structural substrate for resting-state network changes in neuromyelitis optica and their distinction from multiple sclerosis*
Description: My thesis used DTI and high-resolution structural data (T1) to explore underlying causes for resting-state fMRI changes in neuromyelitis optica (NMO) and whether these alterations could distinguish between NMO and MS.
Advisors: Mohammad Ali SAHRAIAN & Amirreza AZIMI
- High School* 1998-2005 Dr. Hesabi High School, Tehran, Iran
Secondary School and High School · Experimental sciences · I ranked 43rd in university entrance examination which had more than 300,000 participants each year.

PUBLICATIONS

- Eshaghi A**, Ferran Prados, Wallace Brownlee, Daniel R. Altmann, Carmen Tur, M. Jorge Cardoso, Floriana De Angelis, Steven H. van de Pavert, Niamh Cawley, Nicola De Stefano, et al. Deep Grey Matter Volume Loss Drives Disability Worsening in Multiple Sclerosis. *Annals of Neurology*.
<https://onlinelibrary.wiley.com/doi/full/10.1002/ana.25145>.
- Eshaghi A**, Razvan V. Marinescu, Alexandra L. Young, Nicholas C. Firth, Ferran Prados, M. Jorge Cardoso, Carmen Tur, Floriana De Angelis, Niamh Cawley, Wallace Brownlee, et al. Progression of Regional Grey Matter Atrophy in Multiple Sclerosis. bioRxiv. Preprint. September 19, 2017, 190116. doi:10.1101/190116. *Brain* in press.
Preprint URL:
<https://www.biorxiv.org/content/early/2017/09/19/190116>
- Eshaghi A**, Wotschel V, Cortese R, Calabrese M, Sahraian MA, Thompson AJ, Alexander DC, Cicarelli O. Grey matter imaging biomarkers differentiate neuromyelitis optica from multiple sclerosis using random-forest classification. *Neurology*. 2016; *Epub ahead of print*. DOI: 10.1212/WNL.0000000000003395
- Eshaghi A**, Riyahi-Alam S, Saeedi R, Roostaei T, Nazeri A, Aghsaei A, Doosti R, Ganjgahi H, Bodini B, Shakourirad A, Pakravan M, Ghana'ati H, Firouznia K, Zarei M, Azimi AR, Sahraian MA. Classification algorithms with multi-modal data fusion could accurately distinguish neuromyelitis optica from multiple sclerosis. *Neuroimage: Clinical*. 2015; 7:306-314. DOI: 10.1016/j.nicl.2015.01.001
- Weier K, **Eshaghi A**, Magon S, Andelova M, Radue EW, Kappos L, Azimi AR, Sahraian MA, Sprenger T. The role of cerebellar abnormalities in neuromyelitis optica - a comparison with multiple

sclerosis and healthy controls. *Multiple Sclerosis Journal*. 2014 (Epub ahead of print). DOI: 10.1177/1352458514554051

6. **Eshaghi A**, Bodini B, Ridgway GR, Garca-Lorenzo D, Tozer DJ, Sahraian MA, Thompson AJ, Ciccarelli O. Temporal and spatial evolution of grey matter atrophy in primary progressive multiple sclerosis. *NeuroImage*. 2014;86:257-264. DOI: 10.1016/j.neuroimage.2013.09.059

7. **Eshaghi A**, Riyahi-Alam S, Roostaei T, Haeri G, Aghsaei A, Aidi MR, Pouretamad HR, Zarei M, Farhang S, Saeedi R, Nazeri A, Ganjgahi H, Etesam F, Azimi AR, Benedict RH, Sahraian MA. Validity and reliability of a Persian translation of the Minimal Assessment of Cognitive Function in Multiple Sclerosis (MACFIMS). *The Clinical Neuropsychologist*. 2012;26(6):975-984. DOI: 10.1080/13854046.2012.694912

8. Sahraian MA, Radue EW, **Eshaghi A**, Besliu S, Minagar A. Progressive multifocal leukoencephalopathy: a review of the neuroimaging features and differential diagnosis. *European Journal of Neurology*. 2012;19(8):1060-1069. DOI: 10.1111/j.1468-1331.2011.03597.x

9. Sahraian MA, **Eshaghi A**. Role of MRI in diagnosis and treatment of multiple sclerosis. *Clinical Neurology and Neurosurgery*. 2010;112(7):609-615. DOI:10.1016/j.clineuro.2010.03.022

10. Sahraian MA, **Eshaghi A**. Concomitant multiple sclerosis and idiopathic thrombocytopenic purpura. *European Journal of Neurology*. 2010;17(8):e62-63. DOI: 10.1111/j.1468-1331.2010.03098.x

ORAL PRESENTATIONS

*Copenhagen,
Denmark*

2013 · Structural substrates for resting-state network changes in neuromyelitis optica and their distinction from multiple sclerosis. 2013 European Committee for Treatment and Research in Multiple Sclerosis (ECTRIMS) congress. Young Investigator's Session

Lyon, France

2012 · Dynamic changes in grey matter volume over 5 years in Primary Progressive Multiple Sclerosis: a tensor-based morphometry study. 2012 European Committee for Treatment and Research in Multiple Sclerosis (ECTRIMS) congress.

INVITED PRESENTATIONS

Milan, Italy

2015 · Advanced Normalization Tools (ANTs) for estimation of atrophy in cross-sectional and longitudinal imaging of patients with MS. Organised by: Neuroimaging Research Unit Institute of Experimental Neurology, Division of Neuroscience, San Raffaele Scientific Institute and Vita - Salute San Raffaele University. Milan, Italy

*Fort Worth,
Texas, USA*

2015 · Relationship between rehabilitation and functional reorganisation of the memory network in MS. Organised by: National Multiple Sclerosis Society (US)

COMPUTER SKILLS

Basic

LaTeX, Fortran, Scala, Cython

Intermediate

MATLAB, UNIX, OpenOffice, Corel Draw, Blender, SPSS, Julia language, Adobe Illustrator

Advanced

Python, R, C, C++

Description: I have used Python, C and C++ to contribute to neuroimaging software packages, such as Nipype (Python) and ANTs (ITK, C++). I have used R to perform multi-modal data fusion from DTI and fMRI in a work that was published in NeuroImage: Clinical (see Publications). I have used MATLAB and SPM for tensor based morphometry in a work that was published in NeuroImage.

OTHER INFORMATION

Awards & Fellowships

- 2011 · Multiple Sclerosis International Federation Du Pre' Grant
- 2012 ·ECTRIMS young investigator's travel grant
- 2013 ·ECTRIMS young investigator's travel grant
- 2014 ·ECTRIMS/ACTRIMS young investigator's travel grant 500 USD
- 2014 · Multiple Sclerosis International Federation's McDonald Fellowship for 2 years
- 2015 · Magnetic Resonance Imaging in Multiple Sclerosis (MAGNIMS)-European Committee for Treatment and Research in MS (ECTRIMS) Fellowship for 1 year

Conference Posters

- 2014 · **Eshaghi A**, Wotschel V, Clabrese M, Alexander DC, Sahraian MA, Ciccarelli O. Distinction between neuromyelitis optica and multiple sclerosis using multi-voxel pattern classification. 2014 American/European Committee for Treatment and Research in Multiple Sclerosis (A/ECTRIMS) congress.
- 2013 · Weier K, **Eshaghi A**, Magon S, Kappos L, Radue EW, Azimi AR, Sahraian MA, Sprenger T, The role of cerebellar pathology in neuromyelitis optica: a comparison to multiple sclerosis patients and healthy controls.2013 European Committee for Treatment and Research in Multiple Sclerosis (ECTRIMS) congress.
- 2012 · B Bodini, M Battaglini, ML Stromillo, **A Eshaghi**, C Gasperini, C Pozzilli, AJ Thompson, N De Stefano, O Ciccarelli. Grey matter microstructural and volumetric short-term changes in early relapsing and progressive MS. European Committee for Treatment and Research in Multiple Sclerosis (ECTRIMS) congress.
- 2011 · Ganjgahi H, Nazeri A, Zarei M., Roostaei T, **Eshaghi A**, Oghabian M.A. Concurrent analysis of structural MRI and proteomics data using parallel ICA in Alzheimer's Disease. 17th Annual Meeting of the Organization for Human Brain Mapping.
- 2011 · Roostaei T, Nazeri A, **Eshaghi A**, Shirazi AH, Ganjgahi H. Determining effects of APOE4 allele on Alzheimer's disease structural brain network, 17th Annual Meeting of the Organization for Human Brain Mapping.
- 2010 · MA Sahraian and **A Eshaghi**. Clinical and radiological characteristics of multiple sclerosis in Iran. 2010ECTRIMS Congress.

Languages

- PERSIAN · Mothertongue
- ENGLISH · Fluent - TOEFL score = 110/120 (April 2013) · IELTS score = 8 / 9 (January 2015)

March 20, 2018