

Acknowledgements

Publications

The presented thesis is a compendium of the following research articles:

- **Sergi Valverde**, Eloy Roura, Arnau Oliver, and Xavier Lladó. MSSEG: a Multiple Sclerosis brain tissue SEGmentation method . *Submitted to Medical Image analysis*. 2016.
- **Sergi Valverde**, Arnau Oliver, Eloy Roura, Deborah Pareto, Joan Carles Vilanova, Lluís Ramió-Torrentà, Jaume Sastre-Garriga, Xavier Montalban, Àlex Rovira and Xavier Lladó. Quantifying brain tissue volume in multiple sclerosis with automated lesion segmentation and filling SPM8 toolboxes. *NeuroImage Clinical*. 2016. Elsevier. [JCR N IF 2.526, Q2(6/14)].
- **Sergi Valverde**, Arnau Oliver, Yago Díez, Mariano Cabezas, Joan Carles Vilanova, Lluís Ramió-Torrentà, Àlex Rovira, and Xavier Lladó. Evaluating the effects of white matter multiple sclerosis lesions on the volume estimation of six brain tissue segmentation methods. *American Journal of Neuroradiology*. Vol. 36(6), pp. 1109-1115. 2015. American Society of Neuroradiology. [JCR RNMMI IF 3.589, Q1(19/125)].
- **Sergi Valverde**, Arnau Oliver, Mariano Cabezas, Eloy Roura and Xavier Lladó. Comparison of ten brain tissue segmentation methods using revisited IBSR annotations. *Journal of Magnetic Resonance Imaging*. Vol. 41, Issue 1, pp. 93-101. January 2015. DOI: 10.1002/jmri.24517. Wiley. [JCR RNMMI IF: 3.210 Q1(23/125)].
- **Sergi Valverde**, Arnau Oliver, and Xavier Lladó. A white matter lesion-filling approach to improve brain tissue volume measurements. *NeuroImage: Clinical*. Vol. 6, pp 86-92. 2014. Elsevier. [JCR N IF 2.526, Q2(6/14)].

The rest of publications derived from this PhD thesis are the following:

Journals

- Eloy Roura, Nicolae Sarbu, Arnau Oliver, **Sergi Valverde**, Sandra Gonzàlez, Ricard Cervera, Nuria Bargalló and Xavier Lladó. Automated detection of Lupus white matter lesions in MRI images. *Submitted to Frontiers in Human Neuroscience*. 2016. Frontiers. [JCR PS IF 3.626, Q1(13/76)].
- Eloy Roura, Arnau Oliver, Mariano Cabezas, **Sergi Valverde**, Deborah Pareto, Joan Carles Vilanova, Lluís Ramió-Torrentà, Àlex Rovira and Xavier Lladó. A toolbox for multiple sclerosis lesion segmentation. *Neuroradiology on October 2015, Vol. 57, Issue 10, pp. 1031-1043*. DOI: 10.1007/s00234-015-1552-2. Springer. [JCR RNMMI IF 2.485, Q2(41/125)].
- Mariano Cabezas, Arnau Oliver, **Sergi Valverde**, Brigitte Beltrán, Joan Carles Vilanova, Lluís Ramió-Torrentà, Àlex Rovira and Xavier Lladó. BOOST: a supervised approach for multiple sclerosis lesion segmentation. *Journal of Neuroscience Methods*. Vol. 237, pp 108-117, 2014. Elsevier. [JCR N IF 2.025, Q3(174/252)].
- Yago Díez, Arnau Oliver, Mariano Cabezas, **Sergi Valverde**, Robert Martí, Joan Carles Vilanova, Lluís Ramió-Torrentà, Àlex Rovira and Xavier Lladó. Intensity based methods for brain MRI longitudinal registration. A study on multiple sclerosis patients. *Neuroinformatics*. Vol 12(3), pp 365-379, 2014. Springer. [JCR CSTM IF 2.825, Q1(13/102)]

Conferences

- Eloy Roura, Arnau Oliver, Mariano Cabezas, **Sergi Valverde**, Deborah Pareto, Joan Carles Vilanova, Lluís Ramió-Torrentà, Àlex Rovira and Xavier Lladó. An SPM12 extension for multiple sclerosis lesion segmentation. *SPIE Medical Imaging 2016*. February 2016, San Diego, USA.
- **Sergi Valverde**, Arnau Oliver, Eloy Roura, Deborah Pareto, Joan Carles Vilanova, Lluís Ramió-Torrentà, Jaume Sastre-Garriga, Xavier Montalban, Àlex Rovira and Xavier Lladó. Evaluation of two automated lesion segmentation and filling pipelines for brain tissue segmentation of multiple sclerosis patients. *ECTRIMS 2015. Multiple Sclerosis*. October 2015, Barcelona, Spain. [JCR CN IF:4.472 Q1(25/191)].
- Eloy Roura, Arnau Oliver, Mariano Cabezas, **Sergi Valverde**, Deborah Pareto, Joan Carles Vilanova, Lluís Ramió-Torrentà, Àlex Rovira and Xavier Lladó.

A toolbox for segmenting multiple sclerosis lesions using T1w and FLAIR images. *ECTRIMS 2015. Multiple Sclerosis*. October 2015, Barcelona, Spain. [JCR CN IF:4.472 Q1(25/191)].

- **Sergi Valverde**, Arnau Oliver, Deborah Pareto, Joan Carles Vilanova, Àlex Rovira, Lluís Ramió-Torrentà and Xavier Lladó. SLF: a MS white matter lesion filling toolbox for the SPM software. *ECTRIMS 2014. Multiple Sclerosis*. September 2014, Boston, USA. [JCR CN IF:4.822 Q1(22/192)].
- Ester Quintana, Brigitte Beltrán, **Sergi Valverde**, René Robles-Cedeno, Hector Perkal, Xavier Lladó, José Manuel Fernández-Real and Lluís Ramió-Torrentà. Expression of miRNAs in multiple sclerosis cerebrospinal fluid and their relation to MR activity. *ECTRIMS 2014. Multiple Sclerosis*. September 2014, Boston, USA. [JCR CN IF:4.822 Q1(22/192)].
- Ester Quintana, Brigitte Beltrán, **Sergi Valverde**, René Robles-Cedeno, Hector Perkal, Xavier Lladó, José Manuel Fernández-Real and Lluís Ramió-Torrentà. Relación entre la expresión de mirnas en LCR y variables de RM. *Neurología*, vol 29, pp 66-67. 2014. [JCR CN IF:1.322 Q3(142/191)].
- **Sergi Valverde**, Arnau Oliver, Mariano Cabezas, Yago Díez, Jordi Freixenet, Xavier Lladó, Joan Carles Vilanova, Àlex Rovira and Lluís Ramió-Torrentà. A quantitative study of the effects of White Matter MS lesions on tissue segmentation methods. *ECTRIMS 2013. Multiple Sclerosis*. October 2013, Copenhagen, Denmark. [JCR CN IF:4.472 Q1(25/191)].

Acronyms

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Introduction

Hello World.