

Curriculum Vitae – Andre Frank Marquand

Date of birth: 12 November 1977
Address: Heyendaalseweg 172, Nijmegen 65 25 SJ. The Netherlands
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Nationality: British / New Zealander
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Educational History / Qualifications:

2011: PhD in Clinical Neuroscience (King's College London, U.K.)

Thesis title: "Probabilistic machine learning methods for multivariate prediction of magnetic resonance images".
Supervisors: Dr. Mitul Mehta and Dr. Janaina Mourão-Miranda. Degree awarded with no corrections required.

2007: MSc in Neuroscience (King's College London, U.K.)

Thesis title: "Application of support vector machines to between-group pattern classification of fMRI data". Pass with distinction (achieved the highest mark in a class of 35).

2001: Certificate of Proficiency in Artificial Intelligence (Victoria University, Wellington, New Zealand)

Grade awarded: A-

1999: BSc in Computer Science and Psychology (University of Canterbury, Christchurch, New Zealand)

Grade point average: A- (equivalent to a first class honours degree in the U.K.).

Current affiliations:

- Aspiring Principal Investigator. Donders Institute for Brain Cognition and Behaviour, Radboud University, Netherlands
- Honorary Lecturer. Institute of Psychiatry, King's College London, United Kingdom.

Publications: 43 fully peer reviewed articles. 11 as first author, 2 as last author, 23 without PhD supervisor

H-index: 16 (Google Scholar)

Journals (Five year Impact factor (IF) and journal rank within ISI subject category given in brackets)

*: joint first/last authorship

1. Schmaal, L., Marquand A.*, et al. (in press) Predicting the naturalistic course of major depressive disorder using clinical and multimodal neuroimaging information: a multivariate pattern recognition study. *Biological Psychiatry* [IF = 10.3, rank = 4/136]
2. O'Muircheartaigh, J., Marquand A. et al. (in press) Multivariate decoding of cerebral blood flow measures in a clinical model of on-going postsurgical pain. *Hum Brain Mapp.* [IF = 6.9, rank = 1/14]
3. Rondina, J., Hahn, T., Marquand A., et al (in press) SCoRS - a method based on stability for feature selection and mapping in neuroimaging. *IEEE Transactions on Medical Imaging* [IF = 4.6, rank 6/102]
4. Hart, H., Chantiluke, K., Cubillo, A., Smith, A., Simmonds, A., Brammer, M., Marquand A., Rubia K. (2014) Pattern classification of response inhibition in ADHD: toward the development of neurobiological markers for ADHD. *Hum Brain Mapp*, 35, 3083-94 [IF = 6.9, rank 1/14]
5. Marquand A., Brammer, M., Williams, S., Doyle O (2014) Bayesian multi-task learning for decoding multi-subject neuroimaging data *Neuroimage*, 92, 298-311 [IF = 6.9, rank = 1/14]
6. Hart H., Marquand, A., et al (2014). Predictive neurofunctional markers of ADHD based on pattern classification of temporal processing *J Child and Adol Psych* 53, 569-78 [IF = 7.4, rank = 9/136]
7. Rocha-Rego V., Jogia, J., Marquand A. et al (2014) Examination of the predictive value of structural magnetic resonance scans in bipolar disorder: a pattern classification approach. *Psych Medicine* 44, 519-32 [IF = 6.5, rank = 12/136]
8. Gong, Q., Tognin, S., Pettersson-Yeo, W., Marquand, A. et al (2014) Multivariate analysis of structural MRI identifies trauma survivors with and without Post-Traumatic Stress Disorder with high accuracy *Psychological Medicine* 44, 195-203 [IF = 6.5, rank = 12/136]
9. Doyle O., Westman E, Marquand A., et al. (2014) Predicting progression of Alzheimer's disease using ordinal regression. *PLOS ONE*. 9 e105542 [IF = 4.0, rank = 7/55]
10. Frick A., Gingnell, M. Marquand A. et al (2014) Classifying social anxiety disorder using multivoxel pattern analysis of brain function and structure. *Behav Brain Res* 259, 330-35 [IF = 3.6, rank = 105/252]

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11. Pettersson-Yeo, W., Benetti, S., Marquand, A. et al (2014) An empirical comparison of different approaches for combining multimodal neuroimaging data with support vector machine. *Front Neurosci* 8, 189 [no IF]
12. Almeida, J., Mourao-Miranda, J., Aizenstein, H., Versace, A., Kozel, F., Lu, H., Marquand, A. et al (2013) Pattern recognition analysis of anterior cingulate cortex blood flow to classify depression polarity. *Br J Psych* 203, 310-1.
13. Marquand, A., Filippone, M. et al (2013) Automated, high accuracy classification of Parkinsonian disorders: a pattern recognition approach. *PLOS ONE* 8, e69237 [IF = 4.0, rank = 7/55]
14. Doyle O., Ashburner, J., Zelaya, F., Williams, S., Mehta, M., Marquand, A. (2013) Multivariate decoding of brain images using ordinal regression. *Neuroimage* 81, 347-57 [IF = 6.9, rank = 1/14]
15. Hahn, T., Marquand, A.*, Plichta, M. et al. (2013) A novel approach to probabilistic biomarker-based classification using functional Near-Infrared Spectroscopy, *Human Brain Mapping* 34, 1102-14 [IF = 6.9, rank = 1/14]
16. Lim, L., Marquand A. et al (2013) Disorder-specific predictive classification of adolescents with attention-deficit hyperactivity disorder relative to autism using structural magnetic resonance imaging *PLOS ONE* 8, e63660 [IF = 4.0, rank = 7/55]
17. Schrouff, J., Rosa, M., Rondina, J., Marquand A. et al (2013). Pronto: Pattern Recognition for Neuroimaging Toolbox. *Neuroinformatics* 11, 319-37 [IF = 2.9, rank = 134/252]
18. Deeley, Q., Oakley, D., Toone, B., Bell V., Walsh, E., Marquand, A. et al (2013). The functional anatomy of suggested limb paralysis. *Cortex* 49, 411-22 [IF = 8.4, rank = 19/252]
19. De Simoni, S., Schwarz, A., O'Daly, O., Marquand, A. et al (2013) Test-retest reliability of the BOLD pharmacological MRI response to ketamine in healthy volunteers. *Neuroimage* 64, 75-90 [IF = 6.9, rank = 1/14]
20. Pettersson-Yeo, W., Benetti, S., Marquand A. (2013) et al Using genetic, cognitive and multi-modal neuroimaging data to identify ultra-high-risk and first-episode psychosis at the individual level *Psychological Medicine* 14, 1-16 [IF = 6.5, rank = 12/136]
21. Marquand A., O'Daly, O., De Simoni S., Allsop, D., Maguire, R. P., Williams, S., Zelaya, F., Mehta, M. (2012). Dissociable effects of methylphenidate, atomoxetine and placebo on regional cerebral blood flow in healthy volunteers at rest: a multi-class pattern recognition approach. *NeuroImage* 36, 1237-47 [IF = 6.9, rank = 1/14]
22. Filippone, M., Marquand A., et al (2012). Probabilistic prediction of neurological disorders with a statistical assessment of neuroimaging data modalities. *Annals of Applied Statistics* 6, 1883-1905 [IF = 2.4, rank = 12/119]
23. Mourao-Miranda J., Almeida, J. Hassel, S., De Oliveira L., Versace, A., Marquand A. et al. (2012). Pattern recognition analyses of brain activation elicited by happy and neutral faces in unipolar and bipolar depression. *Bipolar Disorders* 14, 451-60 [IF = 5.5, rank = 17/136]
24. Mourao-Miranda, J., Olivera, L., Ladoucer, C., Marquand, A., et al (2012). Machine learning and neuroimaging predict future mental illness in at-risk adolescents, *PLOS ONE* 7, e29482 [IF = 4.0, rank = 7/55]
25. Orrù, G., Pettersson-Yeo W., Marquand A., Sartori G., Mechelli, A. (2012) Using Support Vector Machine to identify imaging biomarkers of neurological and psychiatric disease: A critical review. *Neuroscience and Biobehavioural Reviews* 36, 1140-52 [IF = 11.1, rank = 10/252]
26. Marquand A., De Simoni S., O'Daly, O., Williams, S., Mourao-Miranda, J., Mehta, M. (2011) Pattern classification of working memory networks reveals differential effects of methylphenidate, atomoxetine and placebo in healthy volunteers. *Neuropsychopharmacology* 36, 1237-47 [IF = 8.5, rank = 6/136]
27. Hahn, T., Marquand, A., Ehli, A., Dresler, T., Kittel-Schneider, S., Jarczok, T., et al. (2011) Integrating neurobiological markers of depression. *Archives of General Psychiatry* 68, 361-8 [IF = 14.4, rank = 2/136]
28. Mourao-Miranda, J., Hardoon, D., Hahn, T., Marquand A., et al (2011). Patient classification as an outlier detection problem: an application of the one-class support vector machine. *NeuroImage* 58,793-804 [IF = 6.9, rank = 1/14]
29. Gong, Q., Lui, S., Jia, Z., Marquand, A., Scarpazza C., McGuire, P. Mechelli, A. (2011). Predicting therapeutic response in depression with MRI: a support vector machine study. *Neuroimage* 55, 1497-503 [IF = 6.9, rank = 1/14]
30. Marquand, A., Howard M., Brammer, M., Chu, C., et al. (2010). Quantitative prediction of subjective pain intensity from whole-brain fMRI data using Gaussian processes. *NeuroImage* 126, 272-7. [IF = 6.9, rank = 1/14]
31. Ecker, C., Marquand, A., Mourão-Miranda, J., Johnston, P., Daly E. et al. (2010). Describing the brain in autism in five dimensions – magnetic resonance imaging-assisted diagnosis of autism spectrum disorder using a multiparameter classification approach. *Journal of Neuroscience* 30, 10612-23 [IF 7.6, rank = 21/252]
32. Ecker, C., Rocha-Rego, V., Mourão-Miranda, J., Marquand, A., et al. (2010) Investigating the predictive value of whole-brain structural MR scans in autism: a pattern classification approach. *NeuroImage* 49, 44-56 [IF = 6.9, rank = 1/14]
33. Cole, J., Toga A., Hojatkashani C., Thompson P., Costafreda S., Cleare A., Williams S., Bullmore E., Scott J., Mitterschiffthaler M., Walsh N., Donaldson C., Mirza M., Marquand A. et al (2010) Subregional hippocampal deformations in major depressive disorder *J Affect Disord* 126, 272. [IF = 4.2, rank = 30/136]

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34. Marquand, A., Mourão-Miranda, J., Brammer, M., Cleare, A., Fu, C. (2008). Neuroanatomy of verbal working memory as a diagnostic biomarker for depression. *Neuroreport* 19, 1507-11. [IF = 1.8, rank = 196/252]
35. Fu, C., Mourão-Miranda, J., Costafreda, S., Khanna, A., Marquand, A. et al., (2008). Pattern classification of sad facial processing: towards the development of neurobiological markers in depression. *Biol Psych* 63, 656-62 [IF = 10.3, rank = 4/136]

Peer reviewed conference papers (abstracts not listed):

36. Marquand A. et al (2014) Full Bayesian multi-task learning for multi-output brain decoding and accommodating missing data, *International Workshop in Pattern Recognition in Neuroimaging*, Tuebingen, Germany
37. Marquand, A., Rosa, M. J., Doyle, O. (2013) Conditional Gaussian graphical models for multi-output regression of neuroimaging data. *International Workshop on Advances in Regularization, Optimization, Kernel Methods and Support Vector Machines*, Leuven Belgium
38. Doyle, O., Mehta, M., Brammer, M., Schwarz, A., Marquand, A. (2011) Data-driven modeling of BOLD drug response curves using Gaussian process learning. Workshop on Machine Learning and Interpretability in Neuroimaging, *Neural Information Processing Systems*, Granada, Spain
39. Schrouff, J., Rosa, M., Rondina, J., Marquand, A., Chu C., Ashburner, J., Richiardi, J., Phillips C., Mourão-Miranda, J. (2013) Pattern recognition for neuroimaging toolbox. *International Workshop on Advances in Regularization, Optimization, Kernel Methods and Support Vector Machines*, Leuven Belgium
40. Schrouff, J., Rosa, M., Rondina, J., Marquand, A., Chu C., Ashburner, J., Phillips C., Richiardi, J., Mourão-Miranda, J. (2013) Multivariate pattern interpretation using PRoNT. *Pattern Recognition in Neuroimaging*, Pittsburg, U.S.A.
41. Marquand, A., De Simoni, S, O'Daly, O., Mourao-Miranda, J., et al. (2010). Quantifying the information content of brain voxels using target information, Gaussian processes and recursive feature elimination. Workshop on Brain Decoding, *International Conference on Pattern Recognition*, Istanbul, Turkey
42. Chu, C., Bandettini, P., Ashburner, J., Marquand, A., Kloeppel, S. (2010). Classification of neurodegenerative diseases using Gaussian process classification with automatic feature determination., *International Conference on Pattern Recognition*, Istanbul, Turkey

Awards / Grants:

- 2014: Submitted by King's College London as a top early career researcher to the Research Excellence Framework assessment 2014 (one of only 65 early career researchers submitted by the college)
- 2014: DFG Heisenberg Professorship. (Collaborator, PI: Dr. Christine Ecker). Submitted. Requested value: €100,000
- 2014: MRC Strategic skills fellowship (PI). Shortlisted (top 5%) but declined. Requested value £330,000
- 2013: MRC New investigator award (co-Investigator, PI: Dr Mike O'Sullivan). Award value: £403,313
- 2013: Industrial post-doctoral fellowship sponsored by Roche (co-PI). Award value: £154,013
- 2013: Industrial grant sponsored by Janssen (co-PI) Award value: £148,073
- 2013: Industrial grant sponsored by Johnson & Johnson (co-PI) Award value: £37,373
- 2013: MRC research grant (collaborator, PI: Dr. Alice Egerton). Award value: £787,060
- 2013: Medical Engineering Centre annual meeting best paper award
- 2012: Industrial grant sponsored by Janssen (co-Investigator, PI: Prof. S. Williams). Award value ~£100,000
- 2011: MRC Developmental Pathway Funding Scheme (co-Investigator, PI: Prof. S. Williams). Award value: £393,715
- 2011: MRC Neuroscience and Mental Health Board (collaborator, PI: Dr. Andrea Mechelli). Award value: £205,228
- 2011: MRC EME. (co-Investigator, PI: Prof. S. Williams). Shortlisted (top 2%) but declined. Requested value: £603,093
- 2010: NHS healthcare, excellence and leadership Innovation award. (with Dr. C. Ecker and Prof. D. Murphy)
- 2008-2010: Annual Fund studentship. Award value: tuition fees and stipend valued at £16,000 p/a for three years.
- 2008: Overseas Research Student Award. Award value: tuition top-up to international level for three years.
- 2008: MMW studentship (King's College London). Award value: tuition fees and stipend of £14,700 for one year

Employment History (academic):

Apr 2014 – Present: Donders Institute for Brain Cognition and Behaviour, Radboud University, Netherlands.

Role: Senior Staff Researcher

Jan 2011 – Present: Institute of Psychiatry, King's College London, U.K.

Role: Lecturer (promoted in 2013 from Post-Doctoral Researcher)

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Jan 2011 – Jun 2013: Machine Learning in Neuroimaging Laboratory, University College London, U.K.
Role: Honorary Faculty member

Sep 2007 – Dec 2007: Institute of Psychiatry, King's College London, U.K.
Role: Research Assistant

Employment History (non-academic):

Jan 2003 – Sep 2006: Calyon (formerly Credit Agricole Indosuez). London, U.K.
Role: UNIX Administrator / Market Data Support Analyst

Oct 2002 – Dec 2002: City Index Limited. London, U.K.
Role: IT Support Contractor

Oct 2000 – Jun 2002: The National Bank of New Zealand Limited. Wellington, N.Z.
Role: Technical Specialist (promoted internally from Technical Support Analyst)

Jan 2000 – Oct 2000: Canterbury Health Limited. Christchurch, N.Z.
Role: Network Administrator

Students supervised:

- Thomas Wolfers. Full-time PhD candidate 2014-2018 (co-promotor). Funding: European Commission
- Derek Andrews. Full-time PhD candidate 2013-2015 (supervisor). Funding: Medical Research Council (UK)
- Leon Aksman. Full-time PhD candidate, 2013-2015 (supervisor). Funding: Industrial grant sponsored by Janssen
- Richard Parker. Full-time PhD candidate, 2013-2015 (supervisor). Funding: Medical Research Council (UK)
- Holly Philips. Full-time MSc candidate, awarded 2011 (supervisor).

Teaching:

- 2014: Lecturer for postgraduate training courses (Advanced Mathematics)
- 2014: Lecturer for Radboud Summer School (Imaging Genetics)
- 2012-2014: Lecturer and tutor for the MSc in Neuroimaging at the Institute of Psychiatry
- 2009-2014: Lecturer on neuroimaging analysis courses at King's College and University College London.
- 2011-present: Lecturer for the Machine Learning in Neuroimaging Laboratory (University College London)

Invited Lectures (informal talks and lab visits not listed):

- 2015: Nederlandse Vereniging voor Psychiatrie voorjaarscongres, Maastricht, Netherlands
- 2013: European Psychiatric Association annual meeting, Nice, France
- 2012: Pattern recognition in Neuroimaging meeting, London, U.K.
- 2012: Medical Engineering Centres annual meeting, York, U.K.
- 2010 & 2012: Institute of Psychiatry Neuroimaging Seminar, London, U.K.

International Service / Esteem:

- 2014: Programme committee for the Workshop on Bayesian & Graphical Models for Biomedical Imaging
- 2010-2014: Programme committee for the International Workshop in Pattern Recognition in Neuroimaging
- 2012: Local arrangement chair for the International Workshop in Pattern Recognition in Neuroimaging
- 2010: Programme committee for the Brain Decoding Workshop, International Conference of Pattern Recognition
- Developed and actively maintain two freely distributed software packages for the analysis of neuroimaging data (www.brainmap.co.uk/probid.htm and www.mlml.cs.ucl.ac.uk/pronto/)
- Reviewer for international funding bodies including the European Science Foundation, DFG (German Research Foundation) and the Medical Research Council (UK)
- Reviewer for many leading journals including Journal of Neuroscience, Archives of General Psychiatry/JAMA Psychiatry, Biological Psychiatry, Neuroimage and Human Brain Mapping

References available on request