

Multimodal MRI-based classification of Alzheimer's disease

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Stellingen behorend bij het proefschrift

Multimodal MRI-based classification of Alzheimer's disease

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- 1. Combining multiple MRI atrophy measures improves Alzheimer's disease classification. *This thesis*
- 2. Combining multiple functional connectivity measures from a resting state fMRI scan improves Alzheimer's disease classification. *This thesis*
- 3. Alzheimer's disease classification models based on anatomical MRI scans generalise better across different scan sites than models based on diffusion weighted MRI scans and resting state functional MRI scans. *This thesis*
- 4. Baseline MRI scans contain only limited information on future cognitive decline. *This thesis*
- 5. To make MRI scans better suitable for clinical research, we need norms for harmonising scanner hardware and software across different scanning sites.
- 6. Doctors prefer models that are maximally accurate and also easily interpretable, but these two are not easily combined. *Adapted from Galit Shmueli (2010)*
- 7. When looking for small clinical improvements, you need a very large sample size to show these improvements are not due to random chance fluctuations.
- 8. It is unnecessary, and overly complex, to use the value of every single voxel for Alzheimer's disease classification. Averaging over brain regions is simpler and as good.
- 9. Medical science, these days, yields too many very complicated 'proof of principle' papers that will likely never make it to clinical practice.