

Propositions accompanying the thesis

**Advanced Medical Image Registration Methods for  
Quantitative Imaging and Multi-Channel Images**

1. Image registration is an essential tool for the reliable and reproducible extraction of measurements from quantitative imaging datasets (*this thesis*).
2. A quantitative parameter characterising blood perfusion, known as the IVIM parameter  $D^*$ , is a promising marker for capturing treatment response in cystic fibrosis patients with respiratory tract exacerbation (*this thesis*).
3. Among the existing multivariate versions of mutual information, total correlation is particularly suitable for the groupwise registration of multi-parametric medical images such as quantitative MR and dynamic imaging datasets (*this thesis*).
4. Total correlation is a suitable dissimilarity measure for the groupwise registration of multimodal imaging data, provided that multiple feature images are incorporated as additional image channels (*this thesis*).
5. Groupwise registration can decomplexify image registration pipelines (*this thesis*).
6. Politeness is an important concept behind intercultural communication (*Lü, Lang Commun, 2018;61:1-14*).
7. The facilitation coach enables performance improvement by encouraging a person to explore and evaluate the tasks at hand and to discover solutions to problems on their own (*based on Hui et al, J Organ Behav, 2018;39:663-679*). Becoming your own facilitation coach takes time and effort.
8. Land consolidation programmes provide indicators of how comparatively important the economic, social and environmental factors are for a society at a given point of time.
9. The extinction risk for languages is greater than for bird or mammal species (*based on Sutherland, Nature, 2003;423:276-279*). Language diversity should be better protected than it currently is.
10. Both the shared and non-shared knowledge between people with clinical and technical backgrounds are crucial in the development of computer algorithms for health applications.
11. What is asserted gratuitously may be denied gratuitously.

Jean-Marie Guyader, January 2019