Propositions

accompanying the dissertation

Quantification of flyby effects in the three-body problem using the Gaussian process method

by

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1. In real robotic missions, machine learning is the best choice for the situations requiring real-time judgement but lacking of immediate human commands due to long-distance communication. (This proposition pertains to this dissertation.)
2. Machine learning is the only alternative approach to replace numerical integration to design trajectories when taking every dynamical aspect into account. (This proposition pertains to this dissertation.)
3. Applying the Gaussian Process method to the four-body problem is only possible if a quantum computer is developed due to the high-dimensional search space. (This proposition pertains to this dissertation.)
4. For trajectory design, machine learning can only be used in the preliminary design phase. (This proposition pertains to this dissertation.)
5. The core of any culture is only reachable by learning its language.
6. Repetition of mistakes can only be avoided if the people who make decisions have full access to all relevant information.
7. Personalized recommender system used by social networking service encourages the spreading of fake news.
8. Machine learning will make the further development of semi-analytical methods in the three-body problem obsolete.
9. Commercial spaceflight can only be successful if sufficient venture capital is available.
10. Improving state-of-the-art methodology requires the ability to reproduce associated validated results in literature.

These propositions are regarded as opposable and defendable, and have been approved as such by the promotor prof. dr. ir. P.N.A.M. Visser.