

Self-maintenance and Self-replicating Robots

We consider the problem where an entity should be replicated or needs one of its pieces to be replaced. If the entity is built of a discrete number of parts, these parts can automatically be ordered online by the entity as soon as it realizes the parts are needed.

The entity is also capable of reproducing some (or all) of these parts, being able to partial or complete self-replication. This capability introduces the challenge of keeping the quality invariant after many iterations.

In the review of M. Moses and G. Chirikjian [1].

References

- [1] M. S. Moses, G. S. Chirikjian, Robotic self-replication, Annual Review of Control, Robotics, and Autonomous Systems 3 (1) (2020) 1–24. arXiv: <https://doi.org/10.1146/annurev-control-071819-010010>, doi:10.1146/annurev-control-071819-010010.
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