

Epigenetic Tracking: Implementation Details

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"Epigenetic Tracking" is the name of a model of cellular development that, coupled with an evolutionary technique, becomes an evo-devo (or "artificial embryology", or "computational development") method to generate 2d or 3d sets of artificial cells arbitrarily shaped. 'In silico' experiments have proved the effectiveness of the method in de-evolving any kind of shape, of any complexity (in terms of number of cells, number of colours, etc.); being shape complexity a metaphor for organismal complexity, such simulations established its potential to generate the complexity typical of biological systems. Moreover, it has also been shown how the underlying model of cellular development is able to produce the artificial version of key biological phenomena such as embryogenesis, the presence of "junk DNA", the phenomenon of ageing and the process of carcinogenesis. The objective of this document is not to provide new material (most of the material presented here has already been published elsewhere): rather, it is to provide all details that, for lack of space, could not be provided in the published papers and in particular to give all technical details necessary to re-implement the method.

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