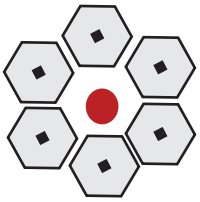
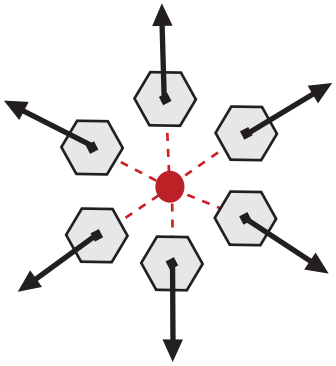
Growth of a system

t = 0



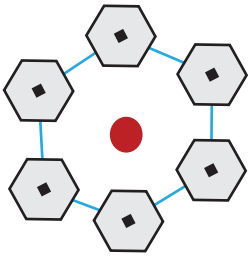
Growth of a cellsystem is a function of time t. A system starts from a point, which is the initial skeleton.

t = 1



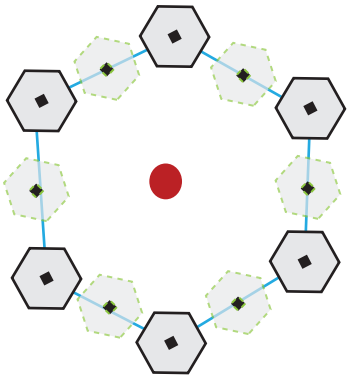
the moving direction of a cell is defined by the vector from the repective midpoint to the cell body.

t = 1



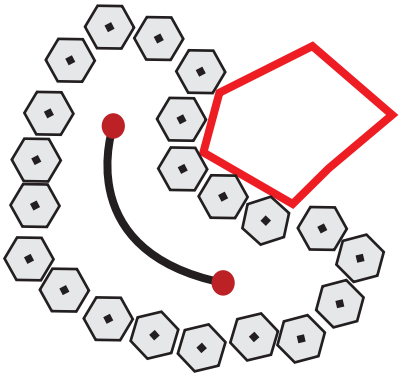
Neighbouring cells are connected with springs such that the cells form a structure. Note that these springs need to expand over time to enable the structure to grow.

t =2



When the length of a spring reaches a certian treshold a new cell is spawned between the connected cells. the old spring is deleted and two new springs form.

t=3



Collisions with physical objects such as cells from other systems naturally cause deformations in the structure. The initial point skeleton changes to a medial axis skeleton.