

Recent advancements in materials science and nanotechnology have propelled the development of programmable matter, unlocking transformative possibilities across diverse domains. Within this field, the hybrid model of programmable matter combines both passive entities (tiles) and active entities (agents) to integrate self-organization with external manipulation, resulting in the achievement of dynamic shape formation. Notably, the shape formation of a line, presented at EuroCG'20, stands as the sole known algorithm for the 3D variant of the hybrid model. In this presentation, we introduce an algorithm that converges any arbitrary initial shape into an 'icicle,' a structure potentially characterized by a smaller diameter and a more compact bounding box compared to the previously achieved line shape. This 'icicle' shape inherits all the benefits of a line, enabling agents to navigate the structure to find tiles that can be picked up without violating connectivity. While we will present convergence and termination, it's important to note that our work is ongoing. The subjects of ongoing research with respect to the presented algorithm include bounds for the increase in diameter, growth of the bounding box, and the algorithm's runtime.