7.349 ASSIGNMENT 1

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ABSTRACT. The use of DNA triple crossover (TX) molecules has recently led to proof-of-concept studies of molecular computation via self-assembly of Wang-like [1] tiles. We propose an extension of previous methods [12.19] which provides for general computation of any Boolean function using only a constant number of tiles relative to the input size. Our method also has the advantage that a single 2D layer (the "program") can be re-used on any input. We also propose a similar method for computing using multiple layers in 3D. This last method can also be used to self-assemble 3D DNA structures.

tie to universality explicitly.

need a bit of detail on layers + their interaction. Also mention actual DNA tiles that can be used.

This paper is very clearly a scientific paper. It's not even a proof-of-concept: it's a suggestion-of-concept. They don't actually do any experiments, and are only mildly concerned with the feasibility of actually implementing their proposed methods. They suggest that their methods for 3D arrays "may ultimately [have] very difficult experimental problems" without going into further detail or suggesting possible solutions. To their credit, they do breifly mention a method for Error Correction, but there is not even a guess as to what rates of errors might be expected. *All very true.*