

# Emergent Design: Opportunities for Hybridizing Agent-Based and Evolutionary Computation

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**Abstract:** Recently hybridized approaches that exploit agent-based computation and evolutionary computation have challenged conventional assumptions about the creative power of digital design tools. A simple artificial ant system that can generate digital painterly and pencil sketching renderings starting from a digital photograph will be presented as one example of how design might be conceptually revisited and approached as a cooperative, emergent designer-computer endeavor. A tool for architects that helps architects generate responsive, natural digital surfaces which can be physically fabricated will be described. It combines evolutionary computation and generative algorithms which allows it to be both interactive with its user and creatively influential.