Automatic Generation of Suboptimal NavMeshes

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Most current games perform navigation in virtual environments through A* for path finding combined with a local movement algorithm.

Navigation Meshes are the most popular approach to combine path finding with local movement. This paper presents a new Automatic Navigation Mesh Generator (ANavMG) that subdivides any polygon representing the environment, with or without holes, into a suboptimal number of convex cells where local movement algorithms can be applied without deadlocks. We introduce the concept of convex relaxation to further reduce the number of cells depending on the flexibility of the local movement algorithm. Finally we show results of the ANavMG and its application to a multi player game.