

Project Summary

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Mentor: TBD

Stephen Meisburger is interested in generating chaotic behavior in simple robots. He believes that it can be done, since the state involves at least 2D position plus angle, and the differential equations can be made arbitrarily complicated by adding sensors and programming. There are a few reasons why one might want chaotic behavior - the most obvious is searching some largely unknown 2D environment without making a map (i.e. without memory). Meisburger would especially like to know if the ideal chaotic behavior persists in the presence of noise (in things like sensor data). A literature search indicates that the idea of using chaos in this way has not been explored in much detail. More commonly, people have applied techniques from the analysis of chaotic systems to robot behavior.