Abstract of Project Description

Probabilistic Search for Tracking Targets: applications in searching for lost aircrafts

We build from the ground up a computer simulation of a search of missing aircrafts. We were able to parse past 50 years of aircraft accident data, extracting the root causes of the accidents and their typical responses (glide, free fall etc.). By parsing these data, we were able to construct distributions of probable crash radius with a relatively high confidence. We run our algorithms on three different types of aircrafts, G280 (small), B737-900ER (medium), and Airbus 380 (large). We assume three types of search agents, UAV, helicopter, and marine surface vessels with variable detector statistics. We attempted to use an algorithm based on statistical local search to optimize the search plan for each agent.