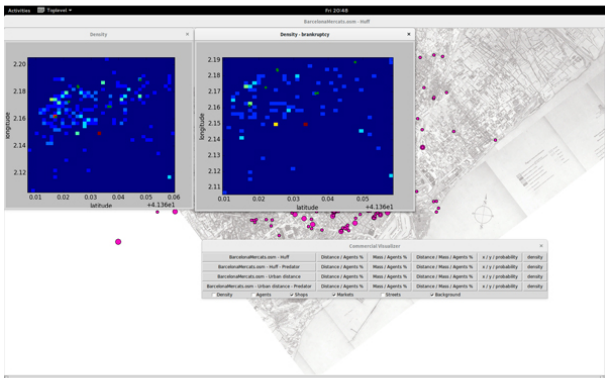


# Commercial Evolution Simulation

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Simulating the evolution of urban landscapes is a challenging objective with a large impact not only for Computer Graphics (for its applications in the filming and gaming industries), but also for urban planning, economical and historical studies, urban physics, and many other. However, this target has remained elusive because of the large complexity implied by urban structures and their evolutions. We present a system that aims at simulating the evolution of the commercial structure in a modern city. In particular, given an initial distribution of shops, it studies the evolution when larger commercial areas, like malls, are introduced.

This is computed using the Huff model as a measure of the attraction each commerce has on potential consumers, and an agent-based simulation to determine how these aspects affect their choices. Then, after a given simulation time, the system decides whether the shop has retained an income such that it can continue operating, or has gone bankrupt. Our system is used to study the evolution of the commercial structure of Barcelona city over the last century.