The dynamics of pedestrian change considerably depending on the surrounding space, and in part for this intrinsic reason the graph made with walking, but also due to the occupied collision and environmental conditions. We have considered a variety of scenarios to develop models and to create a tool that can give an simulation of the movements of a single pedestrian. To properly simulate pedestrian dynamics, we needed information about the probability of changing direction after every step and in every position of the trajectory. This approach is linked to the path to walk a way that gives a trajectory, it is possible to use with some probability where the next step will be. This mathematical approach may be computationally expensive, even more so considering the big amount of data we are using. Therefore, we started by implementing a discretized system and an ant model, then we moved to more complex ones. Finally, we got from types of models: two-state dependent and two-state independent. The scientific aim has been to create a mathematical framework, inspired by Lattice Boltzmann and Cellular Automata, which could learn, starting from real data, the dynamics of pedestrians and quantify them in terms of lattice-transition matrices. The fundamental purpose is to succeed in quantifying the probability field found by utilizing different models. This field allows us to study the dynamics and to create simulations of pedestrians and trajectories where statistics are indistinguishable from the real trajectories' statistics. To consult the online version of this thesis, https://phd.eprints.fri.uni-lj.si/1000/