

## Simulation Study Based Game

André Koscianski<sup>a,b</sup>, :Guilherme Takeshi Saeki Abreu<sup>c</sup>, Luiz Guilherme Monteiro Padilha<sup>d</sup>

<sup>a</sup>DAINF, R.Doutor Washington Subtil Chueire, 330, Ponta Grossa, PR, Brazil

<sup>b</sup> Corresponding Author: [koscianski@utfpr.edu.br](mailto:koscianski@utfpr.edu.br)

<sup>c</sup> Corresponding Author: [TakeshiSaeki@outlook.com](mailto:TakeshiSaeki@outlook.com)

<sup>d</sup> Corresponding Author: [corvonauta.dev@gmail.com](mailto:corvonauta.dev@gmail.com)

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**Keywords:** simulation, game, game engine

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Many computer games are based on an underlying simulation. Some examples are Sid Meier's Civilization, Europa Universalis and F1. In all these examples, the accuracy of the simulation, either regarding historical facts or physical equations, tuned according to the game goals.

In this study, that reasoning is inverted, giving space to a developing idea of a game with a basis in a simulation instead. The project will begin by developing a simulation in public security, with characteristics and behavior of the simulated environment will be the starting point for designing a computer game. The project will emphasize the design and development of software: the simulation model, game mechanics, and algorithms, and accord a little less priority to aesthetic factors. This approach considers that the focus of this study aims at a functional prototype at least, instead of a fully developed game.

The simulator to be developed will be a simplified model for the occurrence of crimes in a city. This theme is being studied by a Master's degree project belonging to PPGCC, aiming to use real data. In the present project, a simplified model will be developed, considering requisites and indications from the master's thesis. The execution of the simulator is expected to reflect, to some extent, actual scenarios, and data. The game mechanics and story will be designed considering the output of the simulation.

In the current phase of project development, preliminary studies were completed on the use of game engines, the design and implementation of simulators and games, and the game creation process. Along with the preliminary studies, the simulator modeling began. Given the data used for the simulator, revolving a simulated urban setting, encompassing both people and agents common to public environments.