

Blue/Red Video Game for Attack and Defensive Analysis

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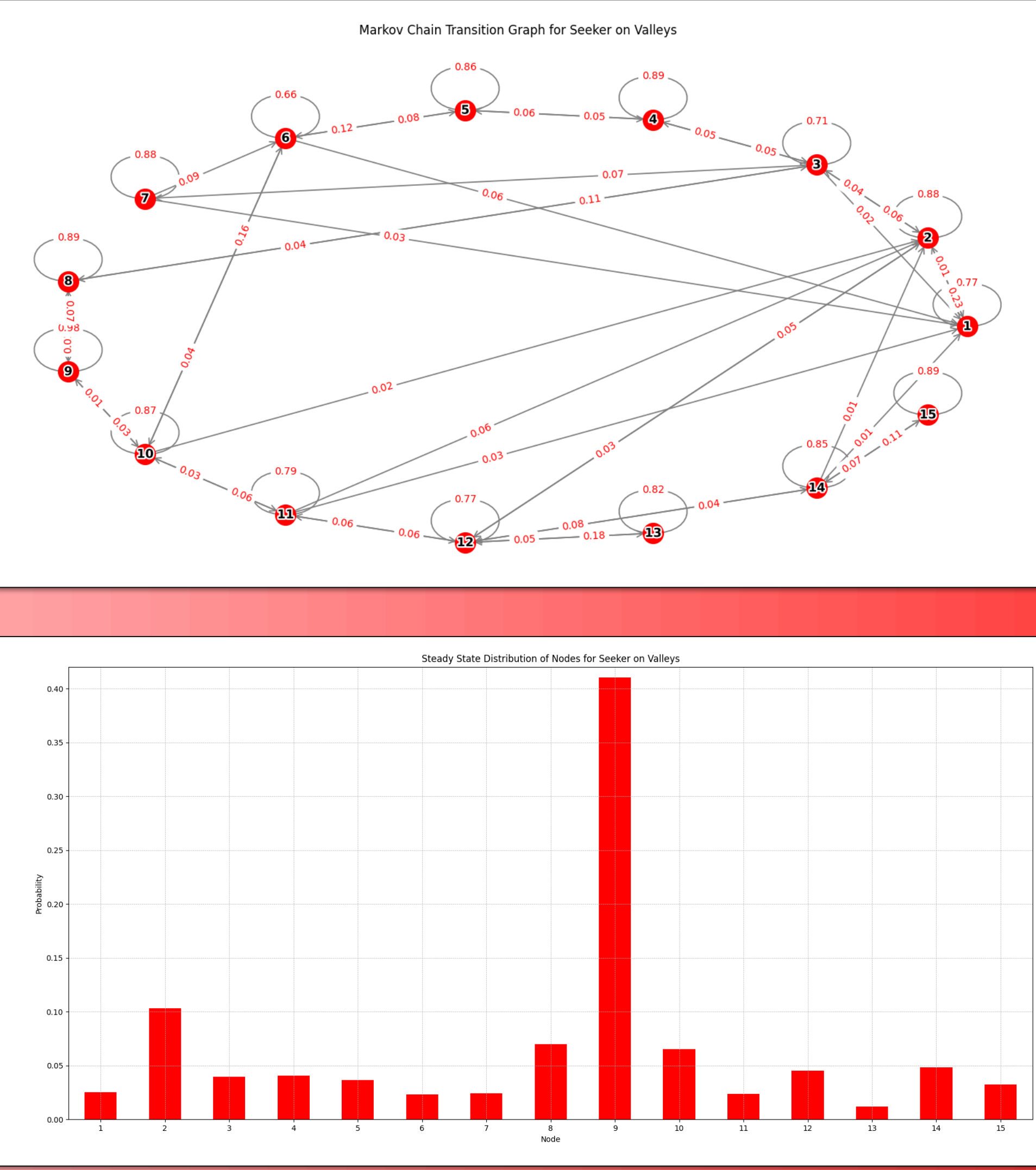
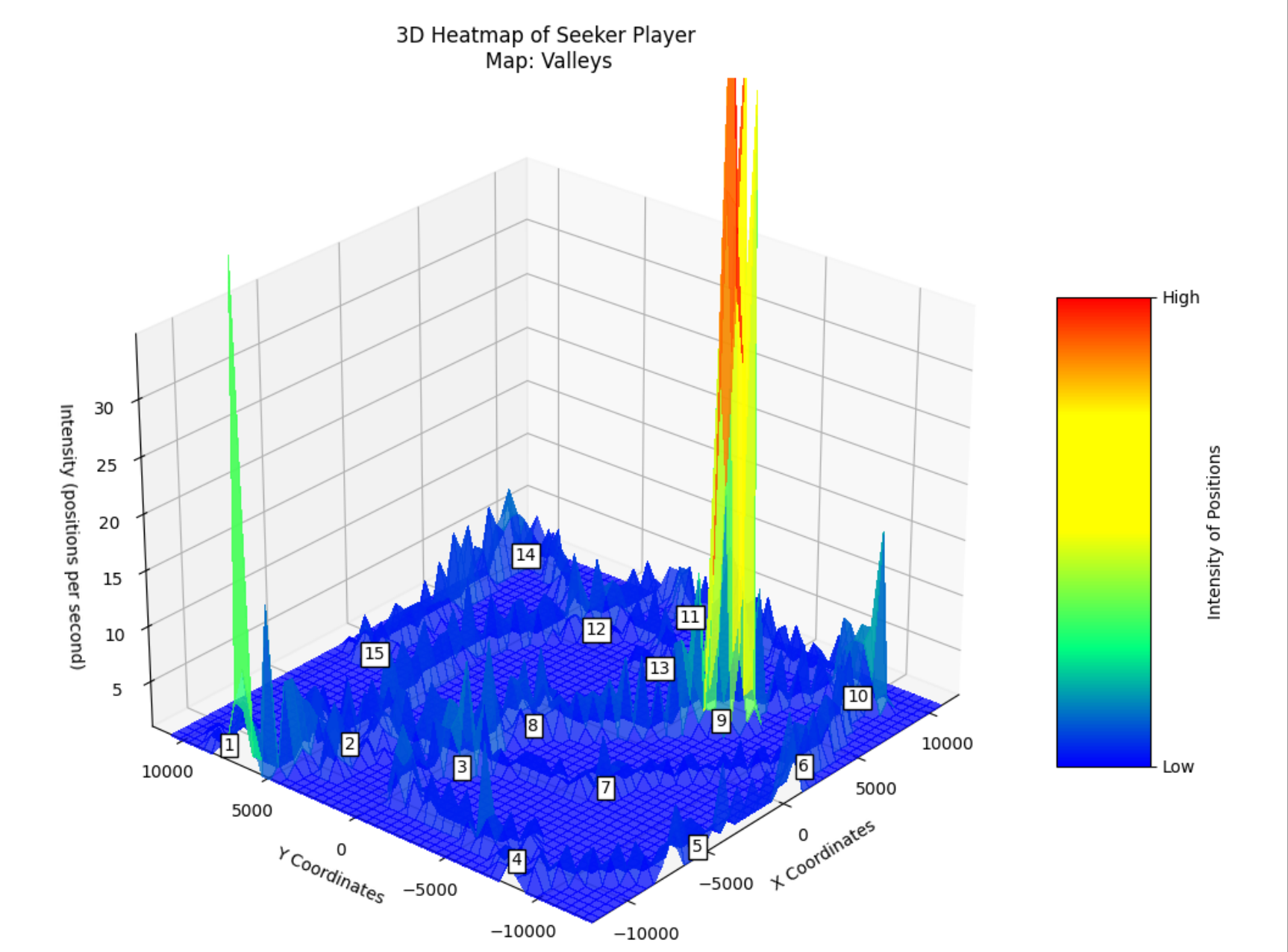
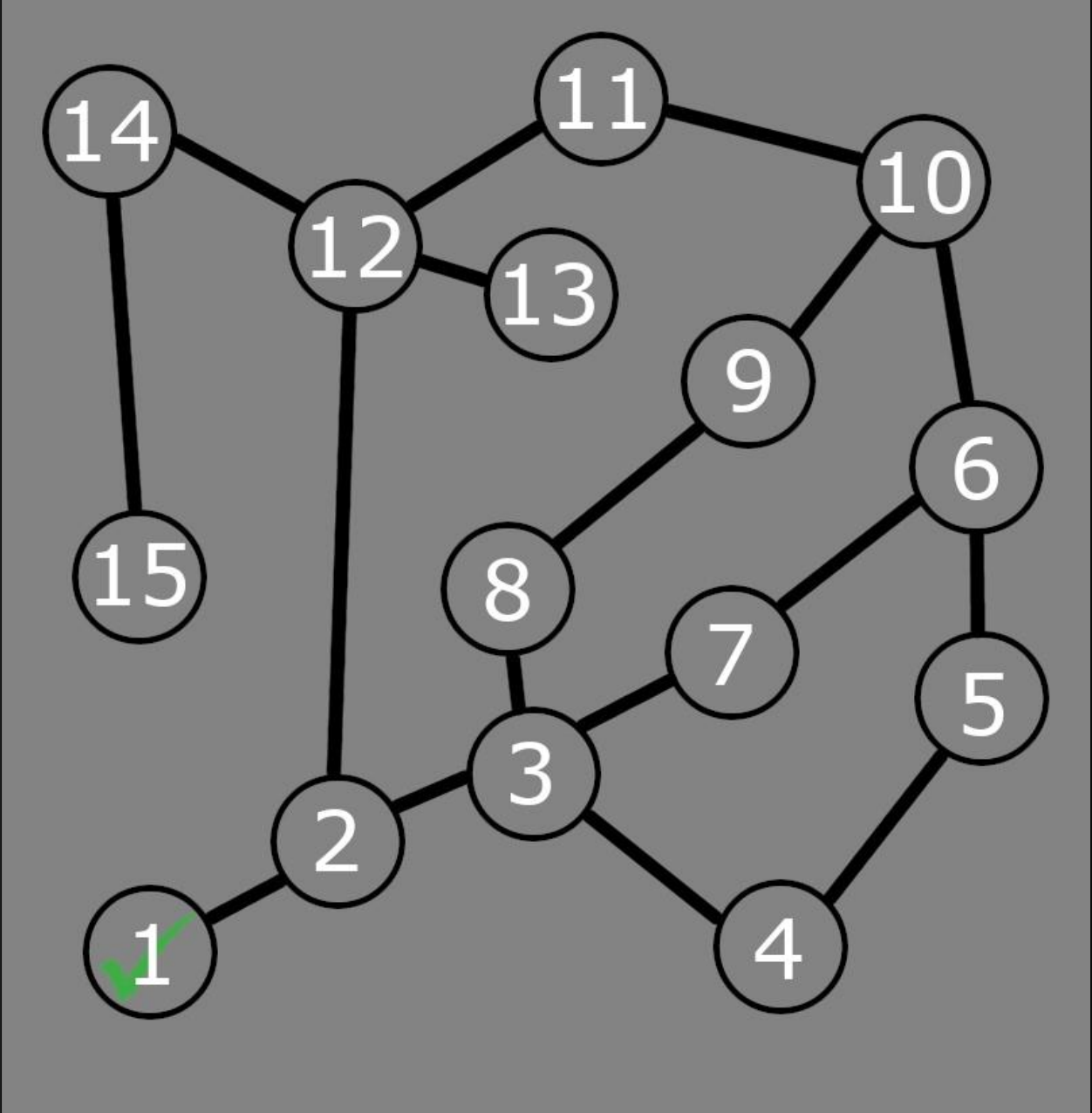
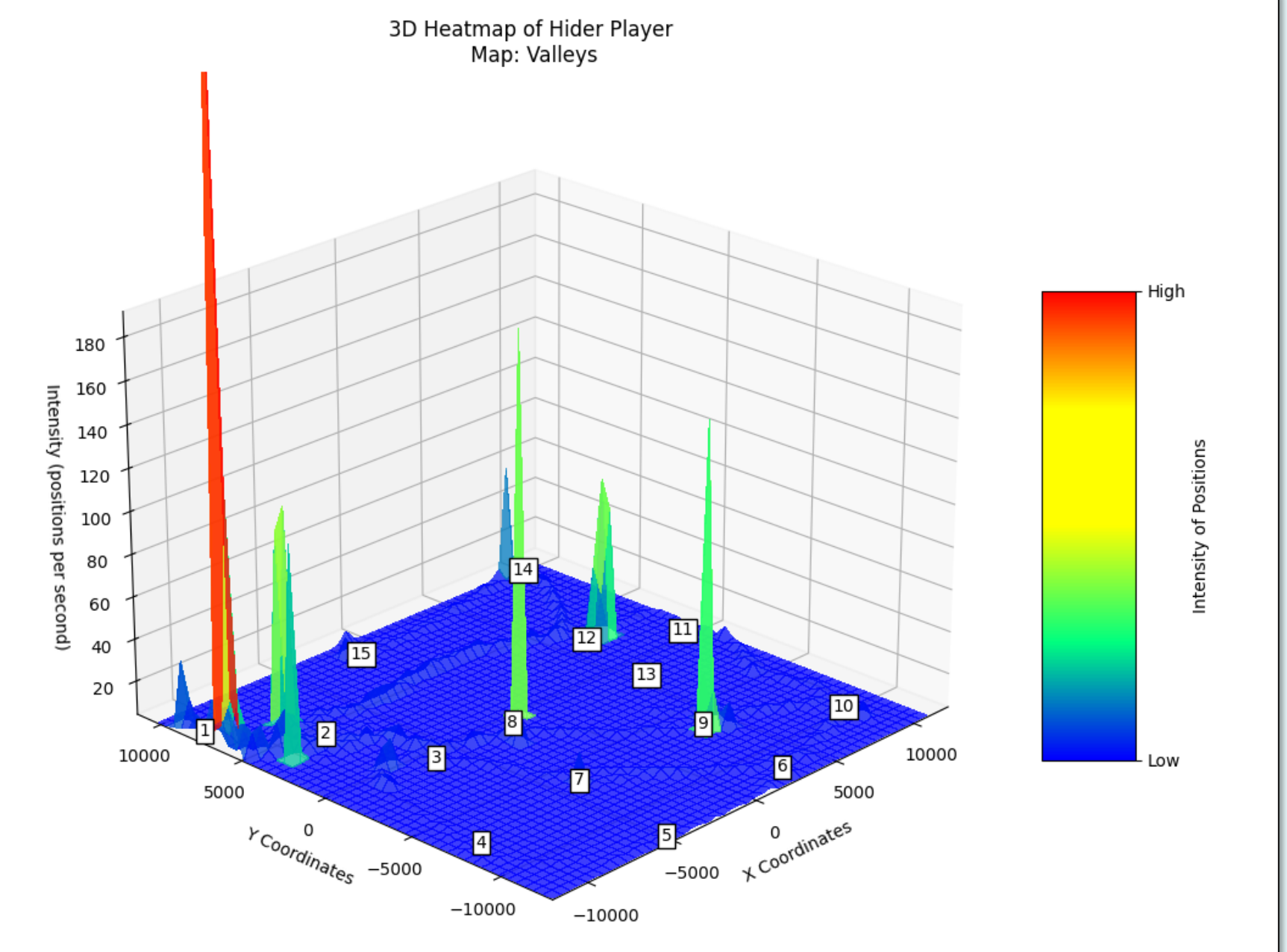
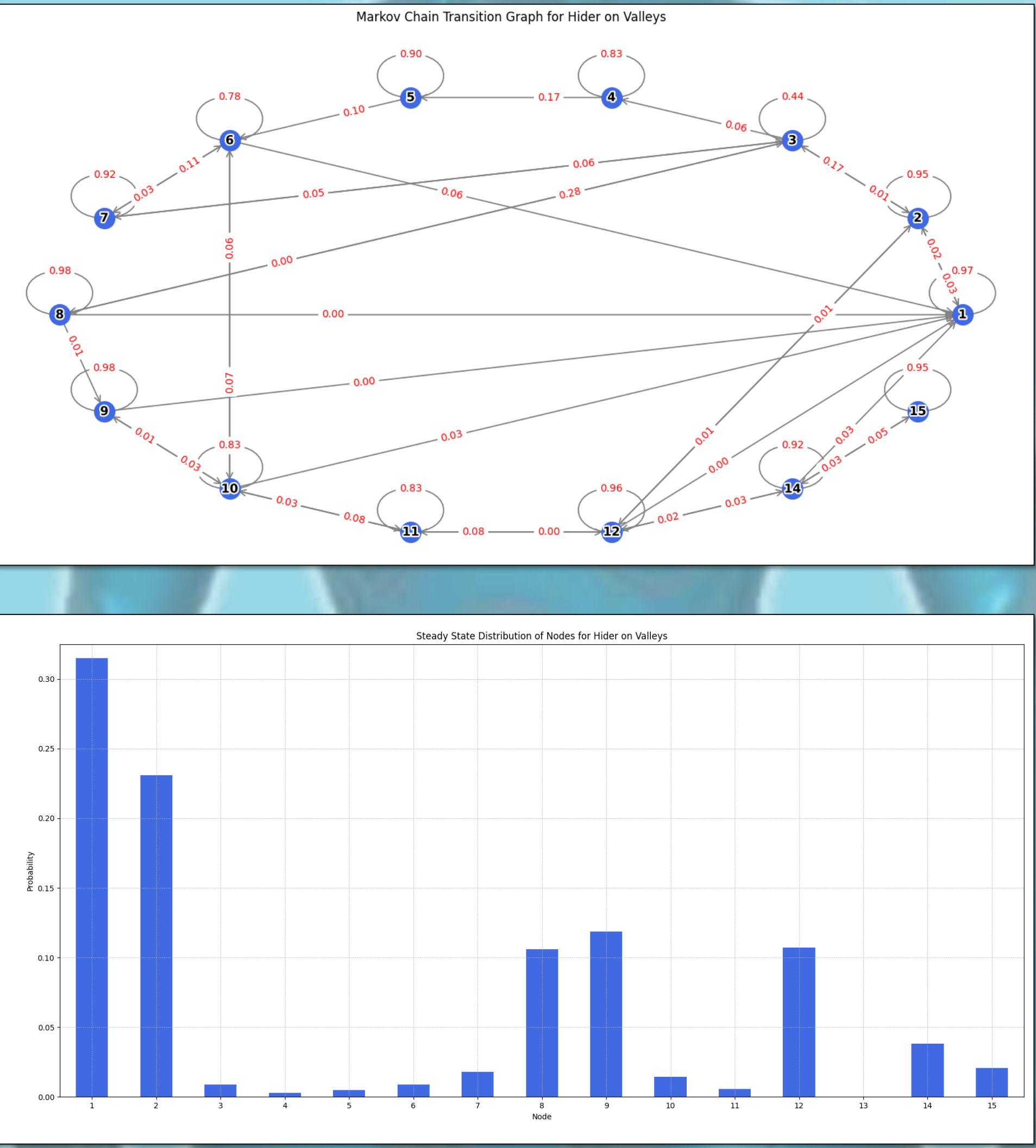
Hider



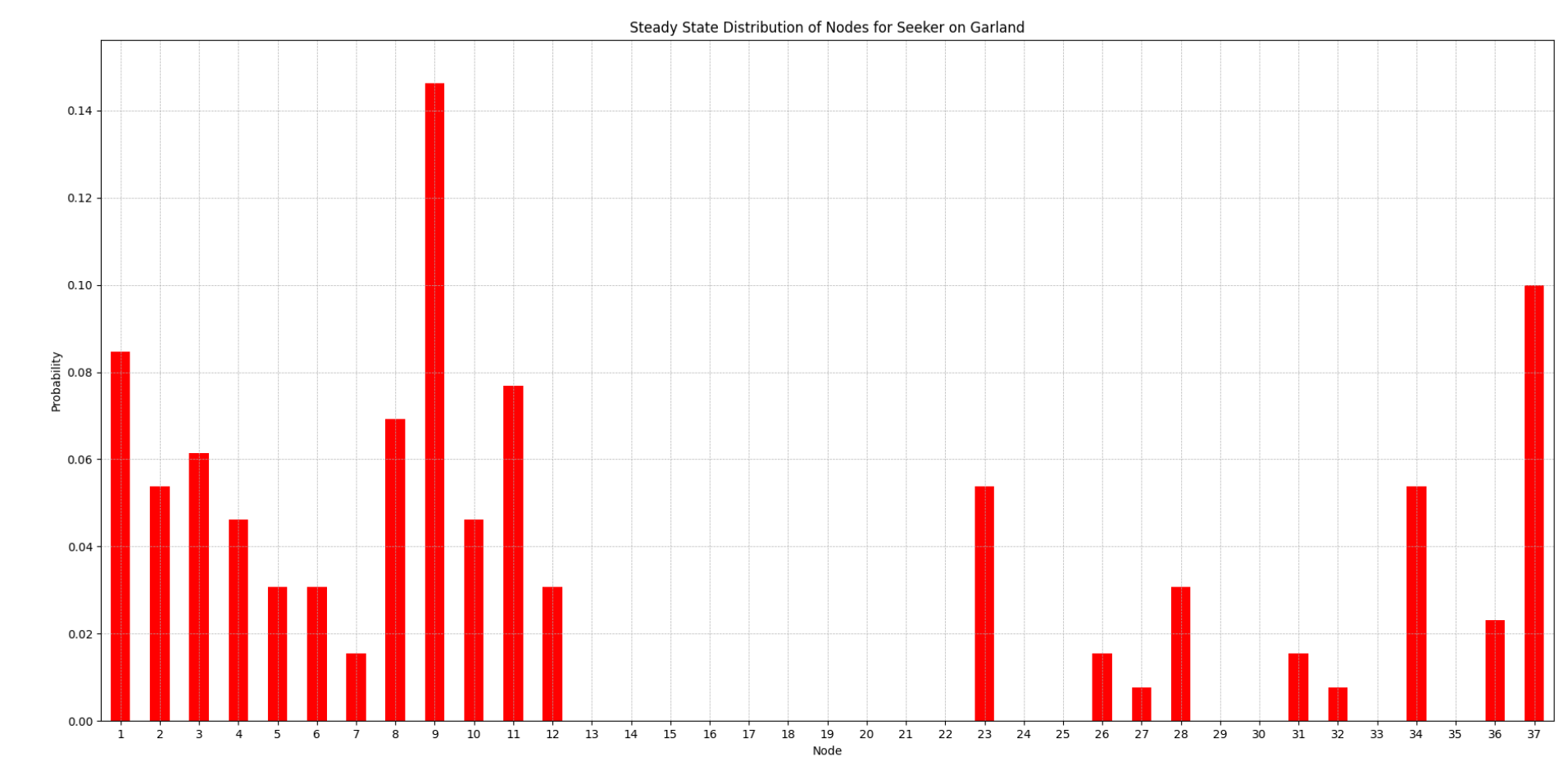
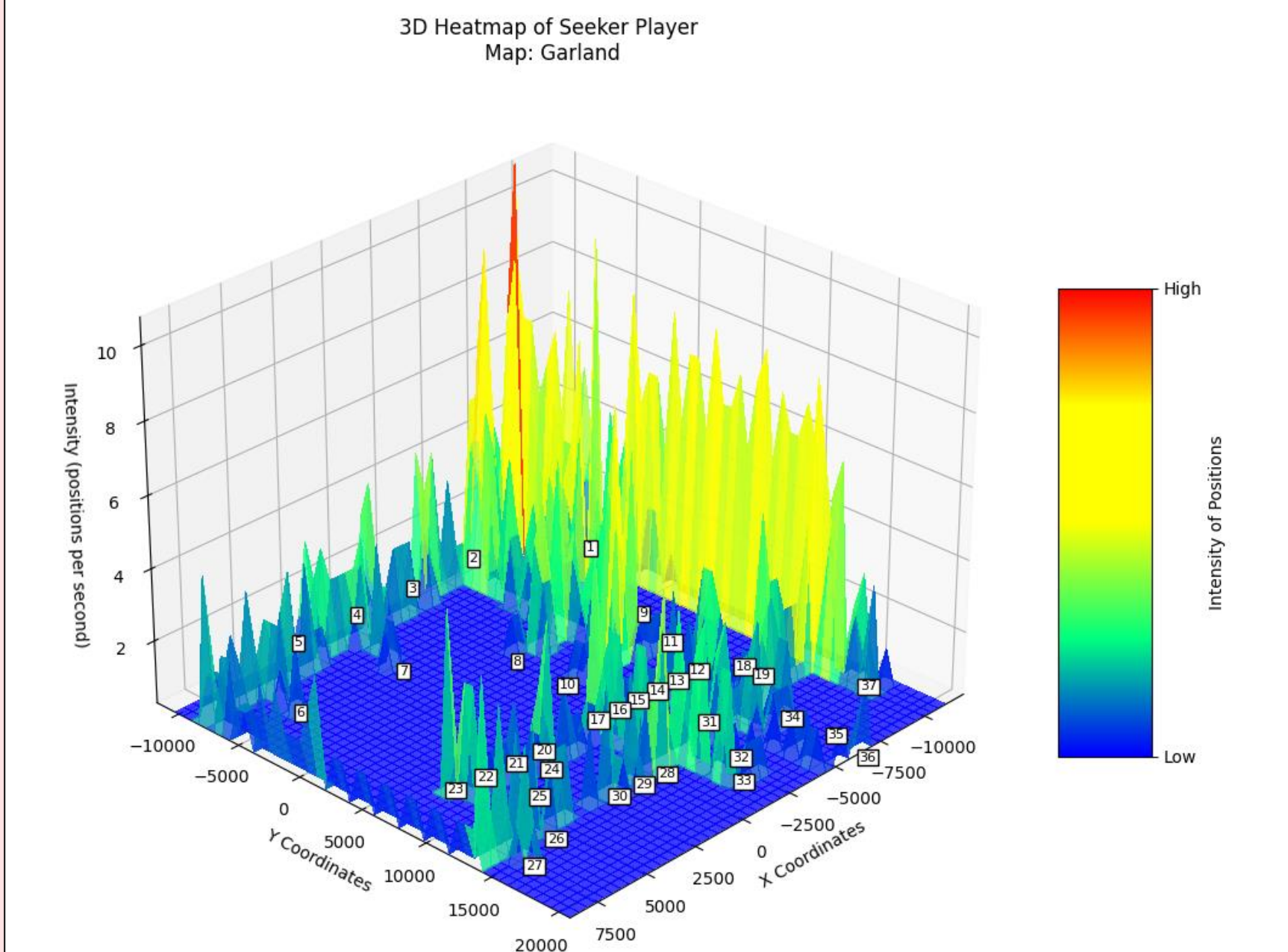
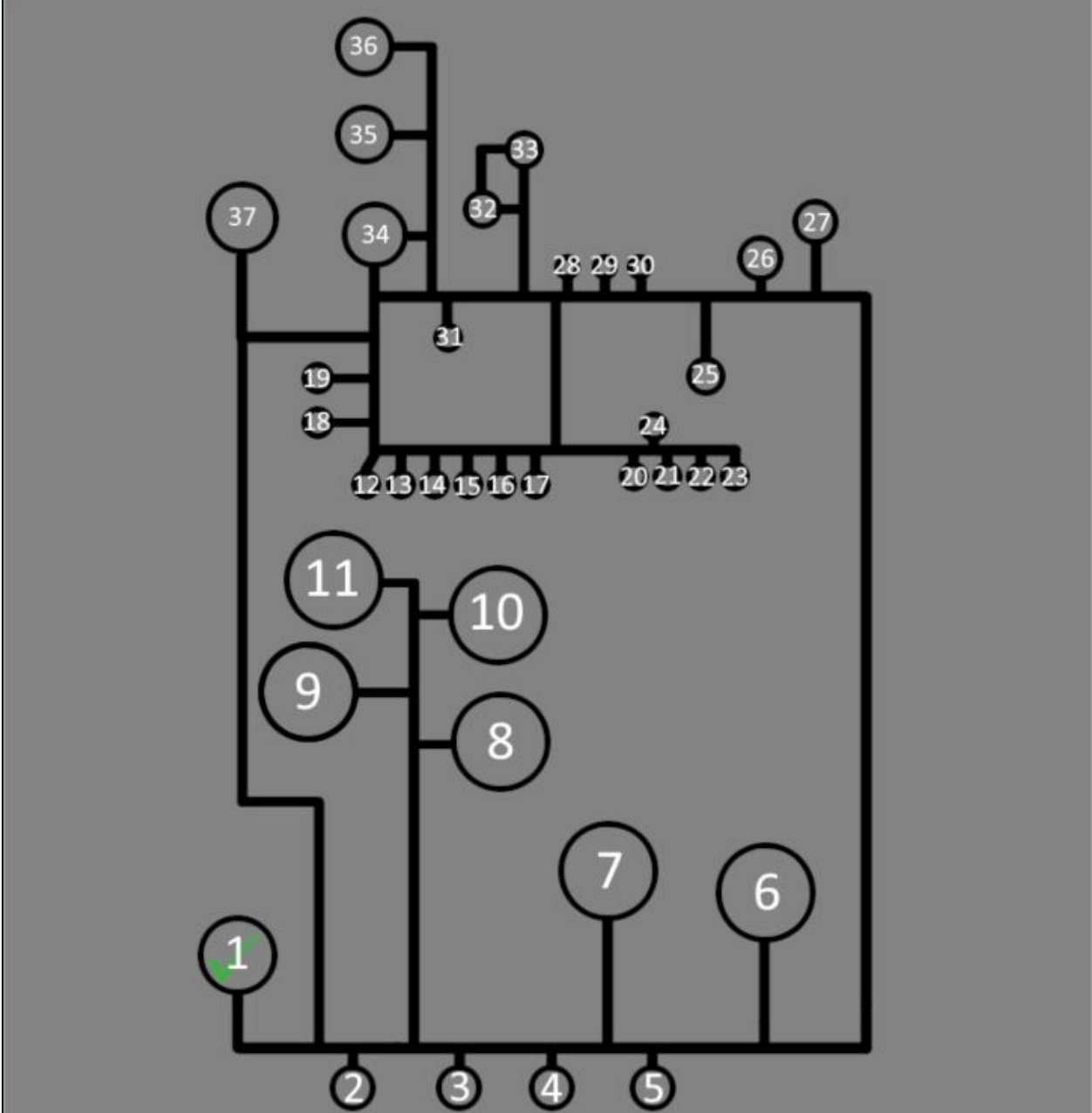
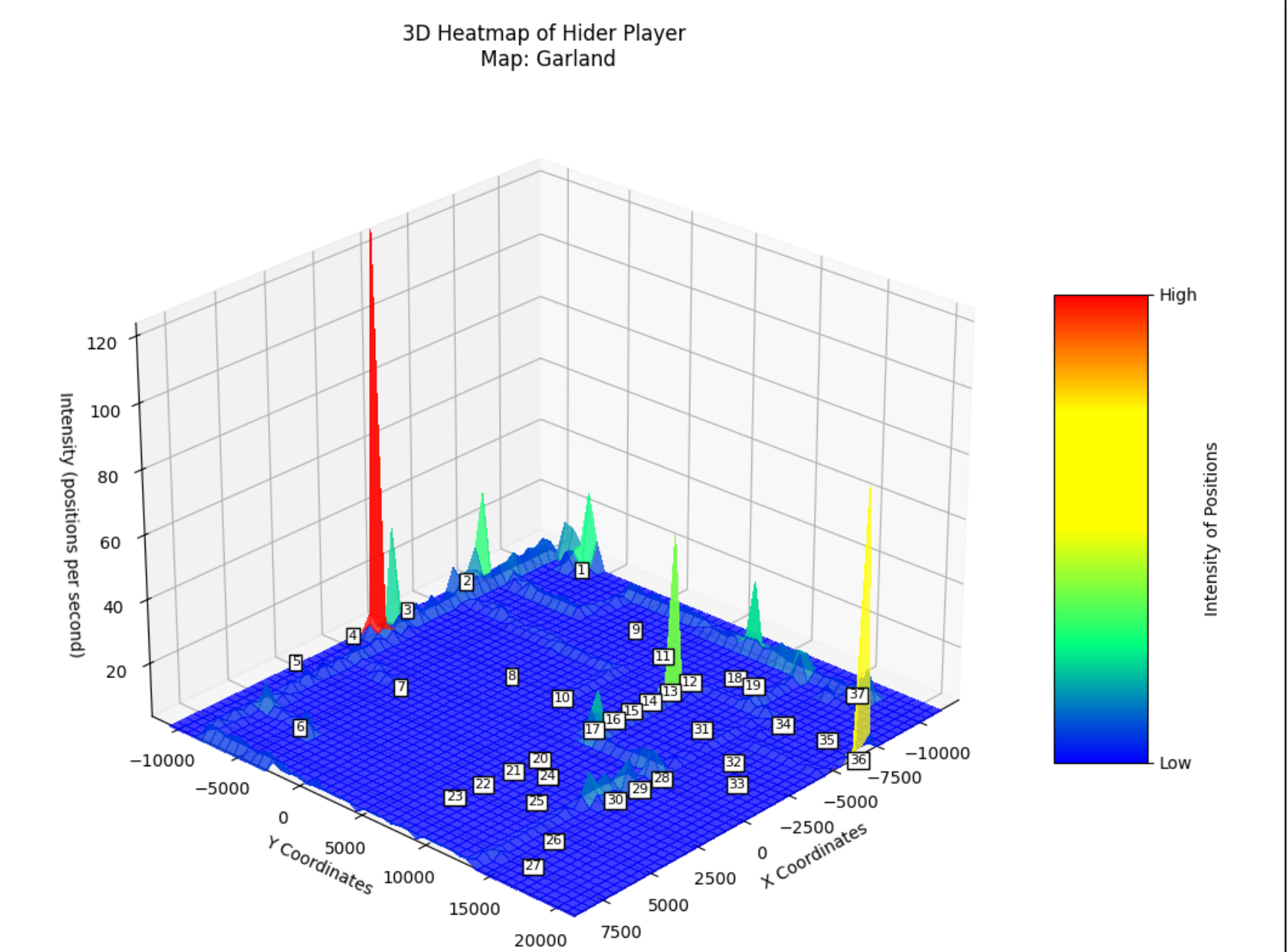
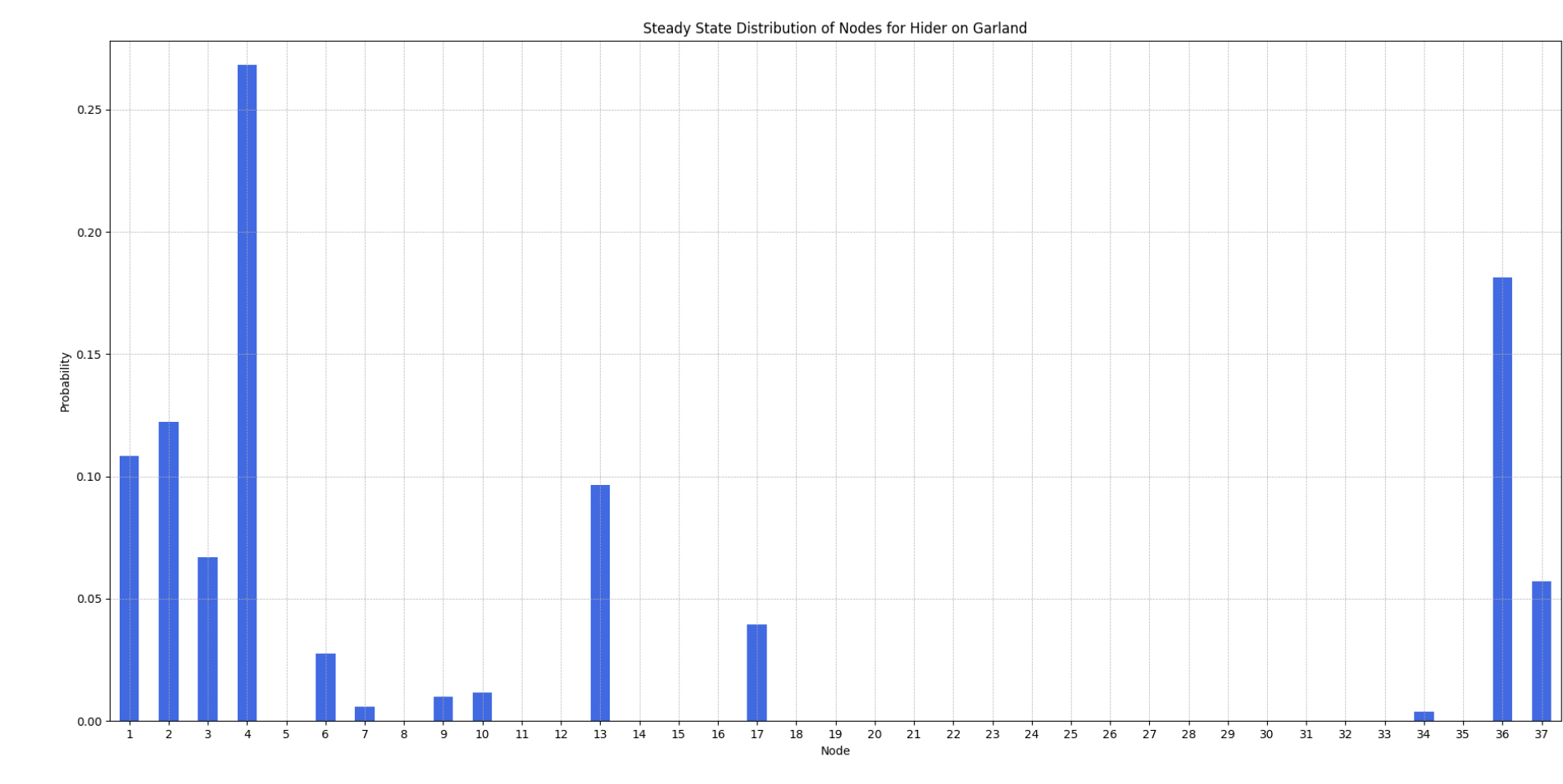
Seeker

ABSTRACT
HAS is a project that explores the dynamics of a unique hide-and-seek game, serving as a metaphorical simulation for cybersecurity practices. In the context of cybersecurity, hide-and-seek is an on-going cat-and-mouse game. This project aims to model the ‘Seeker’s Dilemma,’ a game theory scenario that mathematically represents hide-and-seek on a graph. HAS is designed as a two-player, first-person game using Unreal Engine 5, with multiplayer capabilities facilitated through Steam. The maps are based on planar and utility graph models. By collecting and analyzing gameplay data, we can visualize the strategies employed by both hiders and seekers. This analysis is performed using Markov chain models to construct transition graphs and steady-state distributions, which help in understanding varying player behaviors.

Valleys is a traditional planar graph with no real-world representation. The data analyzed is from 17 games played.



Garland represents Garland Hall at Miami University. The data analyzed is from 10 games played.



GPIO represents a GPIO circuit. The data analyzed is from 10 games played.

