

# MarioMix: Creating Aligned Playstyles for Bots with Interactive Reinforcement Learning

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## Introduction

### Motivation

To bring Together Academic and Game Industry artificial intelligence (AI) through human-computer interaction (HCI).

**Academics** aim to create automatic AI techniques for *general purposes*.

**Game designers** prefer *robust* techniques that perform in *particular games*.

HCI

### What are we doing?

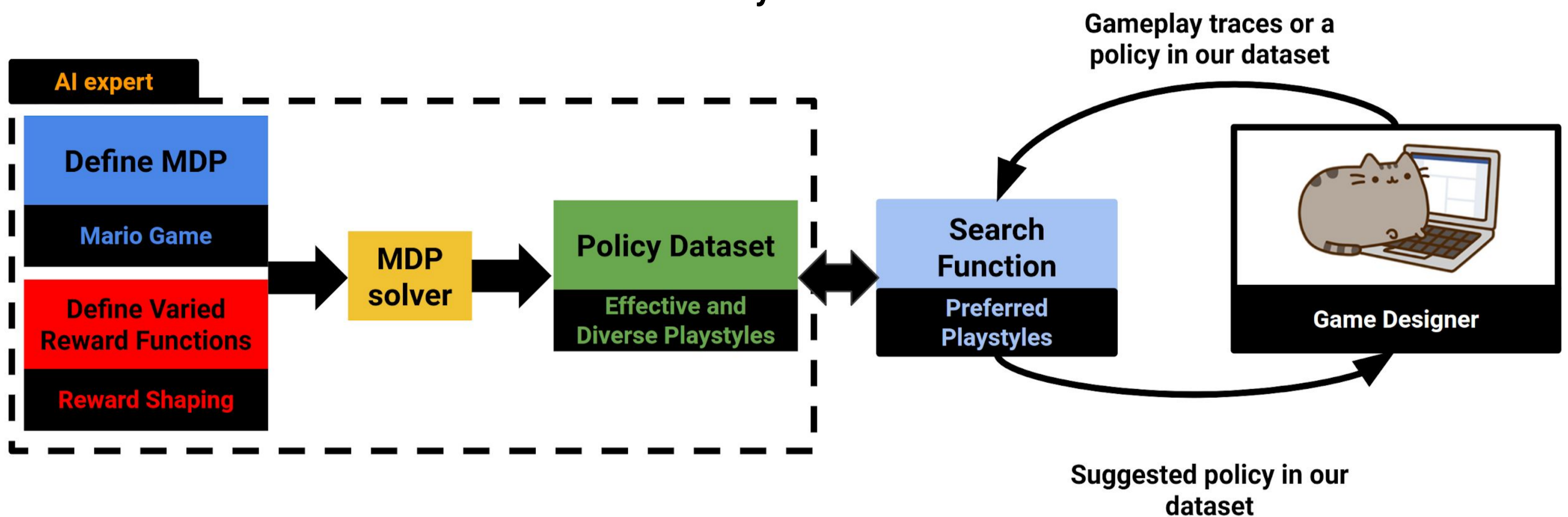
Creating interactive reinforcement learning (RL) usable in high-dimension environments since most interactive RL-based applications require up to millions of human feedback samples to get good results.

### How are we doing it?

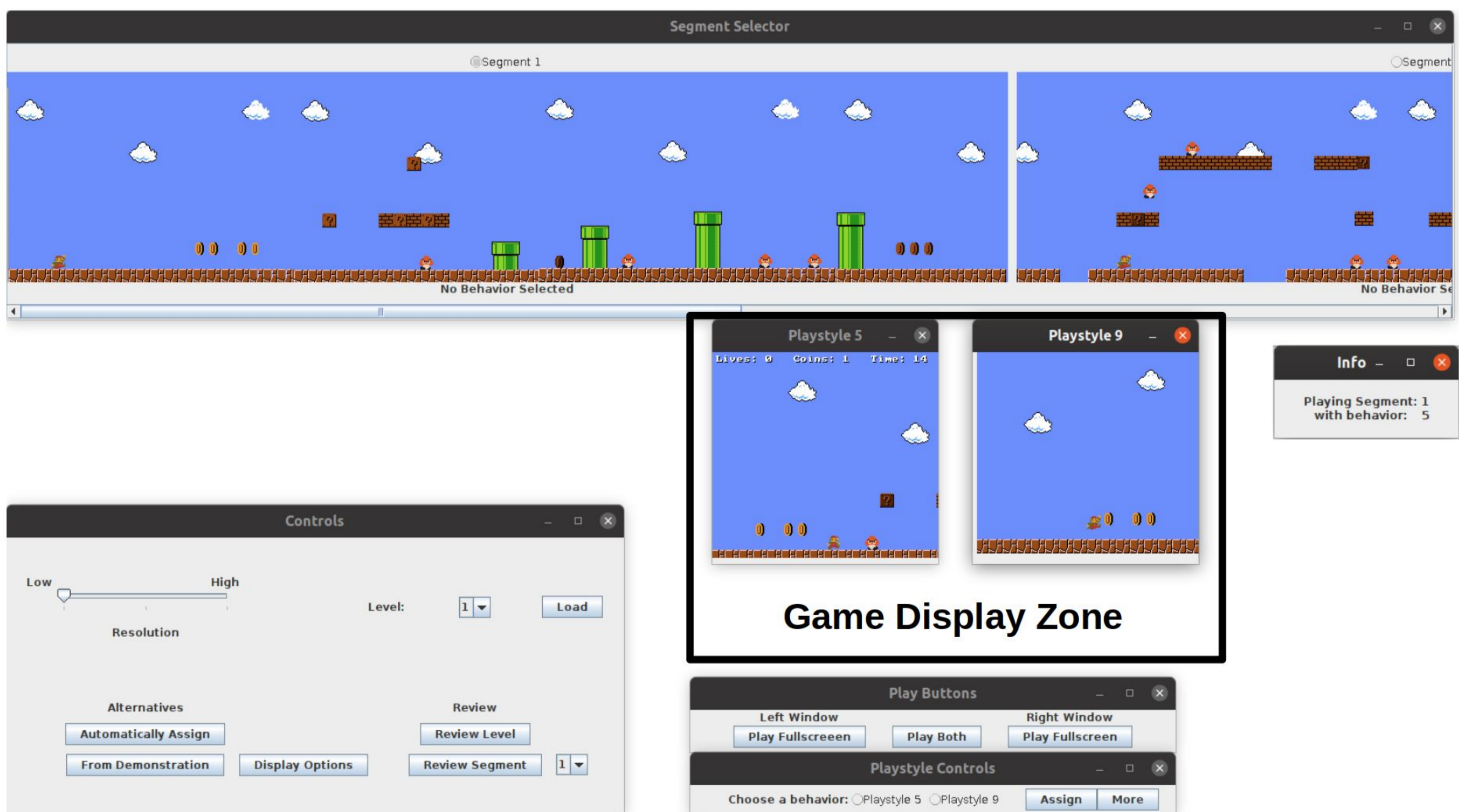
We are proposing a novel interaction procedure that consists of mixing pre-computed policies and a search method to find playstyles that fit the end-users' preferences.

## Our Approach

### System



### Interface



## Results

The game designers that tested our system responded positively to the MarioMix interaction method of creating bot behavior. From the user study, we can conclude that the top-down method of our generic framework for tackling the agent alignment problem is effective; the participants consider that the behaviors they created for synthetic testers are close enough to their intentions to be useful in a real-world scenario. Nevertheless, they would like to be able to create more precise behaviors for certain events in the game.

