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Procedural Content Generation for Racing Games

Exploring PCG in Racing Game Design

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Abstract

Overview

- Procedural Content Generation (PCG) in racing games enables dynamic and diverse game worlds.
- Focus on algorithms, techniques, and design principles for immersive and challenging racing experiences.
- Discusses challenges and ethical considerations of PCG in racing games.
- Explores future research directions in PCG for racing games.

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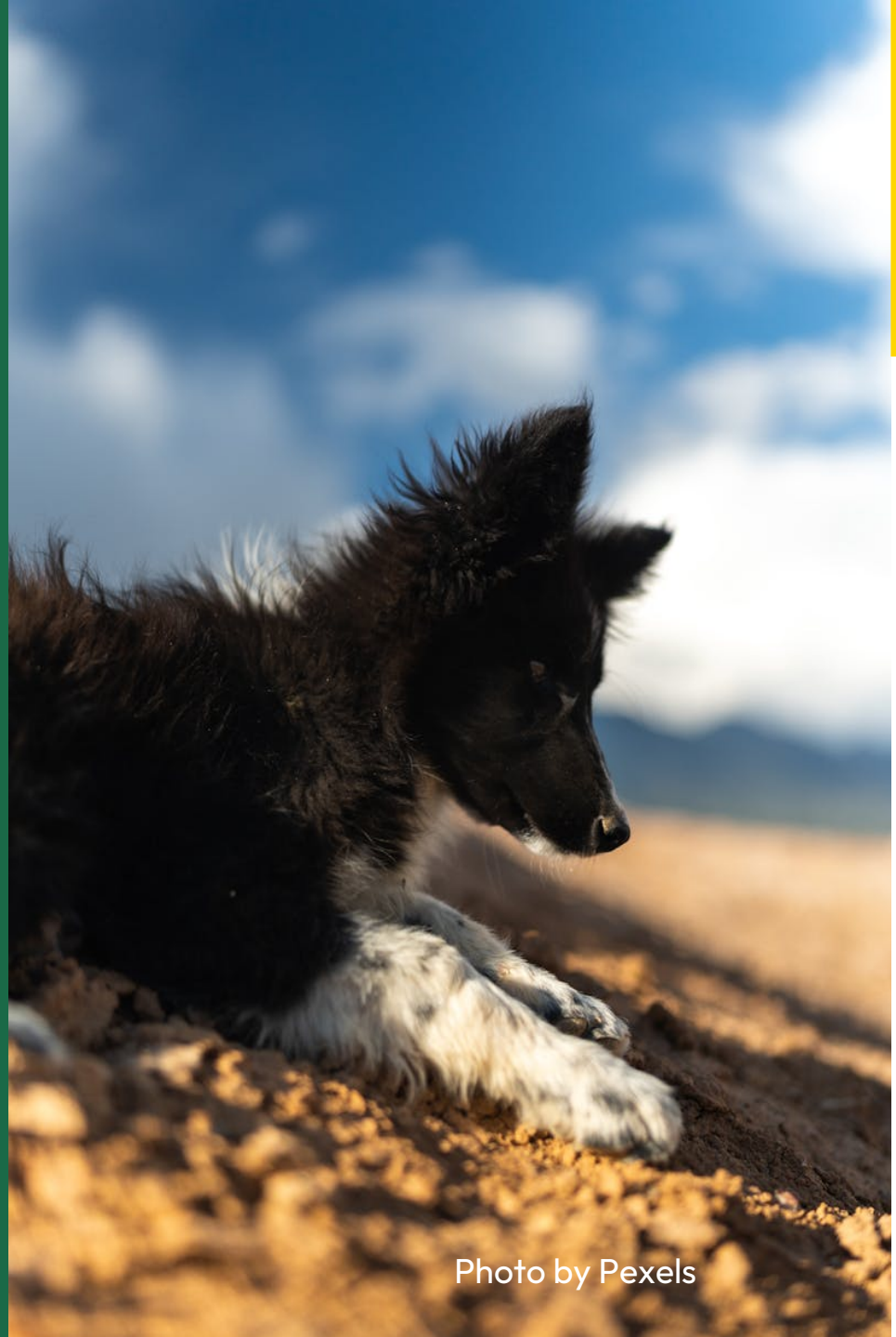
Introduction

Game Evolution

- Racing games offer high-speed competition and entertainment to players worldwide.
- Developers face challenges in creating diverse and engaging racing environments.
- PCG emerges as a vital tool for generating dynamic tracks, environments, and obstacles.
- Enables developers to offer varied and exciting racing experiences to gamers.



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Algorithms and Techniques

Innovative Solutions

- Perlin noise for realistic terrain features, Voronoi diagrams for track boundaries, and cellular automata for crowd behavior simulation.
- Algorithms combined and modified to create unique and challenging racing experiences.
- Various techniques enhance realism and excitement in the game environment.
- Incorporating advanced algorithms for generating dynamic racing tracks and obstacles.

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Balancing Chaos and Order

Design Challenge

- Key challenge: balancing chaos and order in PCG for racing games.
- Maintaining a fine balance to ensure challenging yet enjoyable gameplay experiences.
- Strategic use of algorithms to create dynamic and engaging racing environments.
- Achieving the perfect mix of randomness and structure for an immersive gameplay experience.