ONEBONSAI

CASE STUDY

e-Bike Driving Simulator

The e bike simulator is a mobile VR training experience that allows young riders to practice electric bike riding in realistic urban traffic environments.

Platform: VR



Project overview

The e bike simulator is a mobile VR training experience that allows young riders to practice electric bike riding in realistic urban traffic environments.

About the project

OneBonsai designed a mobile VR e-bike simulator that lets young riders experience real-world traffic challenges and the dangers of unsafe riding. The engaging, hands-on training boosts safety awareness and encourages responsible road behavior, more specifically adjusted speed for high-density living environments.

Challenge

Raising Safety Awareness for Young E-Bike Riders

The popularity of high-speed e-bikes among young people has grown rapidly, but so too have the associated risks. Many young riders underestimate the dangers of riding at speed in dense urban traffic, often lacking the real-world experience needed to navigate safely.

Traditional road safety education, such as lectures, brochures, or classroom discussions, struggled to capture attention and rarely left a lasting impression. Without a way to vividly demonstrate the consequences of risky behavior, safety trainers found it difficult to influence habits. Schools, municipalities, and community organizations needed a more engaging, realistic, and impactful method to instill safe riding behavior in young cyclists.

> *"Traditional road safety lessons didn't convince young riders of the real dangers of e-bikes."*

Solution

VR E-Bike Safety Simulator

OneBonsai developed a VR-based simulator that combines a physical e-bike setup with immersive virtual environments. Trainees sit on a real bike and "ride" through a VR urban setting filled with cars, pedestrians, and everyday road challenges. The system simulates real-world hazards and dangerous scenarios, including the impact of reckless riding or failing to pay attention. Crucially, the simulator concludes with a controlled crash experience, allowing riders to feel the stark consequences of unsafe choices without any real danger. This combination of realism and safety created a powerful way to connect with young audiences.

Approach

Realistic and Engaging Road Safety Education

The simulator was designed to be mobile and event-ready, enabling it to be deployed in schools, public safety campaigns, or community events. Its physical-virtual integration provided a highly engaging, hands-on learning experience, drawing in participants who might otherwise ignore safety lectures.

The VR environments were built to replicate realistic traffic dynamics, ensuring that trainees faced the same split-second decisions they would encounter on actual roads. By making the simulator portable and easy to set up, it became a versatile tool for outreach, capable of reaching large numbers of young riders across different settings.

> *"When the crash happened in VR, it really opened my eyes to how dangerous e-bikes can be."*

Outcome

Improved Awareness and Safer Riding Behavior

The E-Bike Simulator proved highly effective in changing attitudes and raising awareness about safe cycling. Young participants reported a stronger understanding of how quickly things can go wrong at high speed, while teachers and campaign organizers praised the simulator's ability to engage students in a way that lectures could not. The immersive crash experience left a memorable impression, helping instill safer habits and encouraging more responsible riding behavior. Beyond individual impact, the simulator offered a scalable solution for public safety campaigns, making it a powerful educational tool for promoting safer roads in communities.

> *"This simulator is an innovative way to promote road safety in schools and communities."*

Discuss a similar project

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