



# Video Game Addiction In Machine Learning Using Decision Tree Classifier

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## Abstract

Video games are immensely popular and played particularly among teens, young adults and any aged groups. Video game addiction is also known as gaming disorder or internet gaming disorder, generally defined as a psychological and mental addiction by repetitive use of the Internet to play games frequently with different gamers, potentially leading to negative consequences in many aspects of life. Some players become more concerned with their interactions in the game than in their broader lives playing video games for extremely long periods of time. Video game addiction may have both short and long-term impacts on gamers and also it has become a serious public health issue with increased prevalence. The most debates surrounding the potential effects of video game engagement are focused on the mental health. It results an individual's ability to function in various life domains over a prolonged period of time. Parental and government concern to remove or ban addictive properties for causing deviancy from video games. The main objective of this article is to know how games impact on lives and how often games are played among any aged groups.

## Keywords

Addiction, internet gaming disorder, compulsive gambling, mental disorder, conduct disorder

## Introduction

Game playing is part of modern culture rather than simply an addictive product. Game playing is not necessarily a detrimental activity and actually enhances the cognitive, motivational, emotional and social abilities of a person and fosters some real world benefits. Contrary to conventional beliefs that video games promote lazy and sedentary behavior, they actually promote a wide range of cognitive skills. Preliminary research has also revealed quantifiable improvements in neural processing efficiency by playing some specific types of games. In addition to these, other benefits of playing games include improved problem solving skills; improved creativity; high levels of motivation and optimistic behavior toward facing failures, triggering of positive emotional experiences; distraction from pain in patients undergoing prolonged invasive cancer treatments; psychotherapeutic effects in children; and physical therapy and rehabilitation uses in patients following trauma or other injuries.

The amusement factor of game playing is differentiated from addiction by the psychological term “flow”, which is a state described as a “state of optimal experience and inherent motivation” and often “the most enjoyable part” of life and is considered as very important factor for refreshing and enhancing brain activity. Nine characteristics of “flow” include “a balance between challenges and skills, clear goals, immediate feedback, intense concentration, merging of action and awareness, loss of self-consciousness, a sense of control, time distortion and experience the activity as intrinsically rewarding”. Flow helps not only in relaxing the brain but also in improving brain functionality and concentration during work. Flow is an enjoyable positive factor, but excessive game playing may lead to a more negative aspect called “addiction” that causes dependency and may ultimately be characterized as a disease. Therefore, these two terms are related to game playing and need to be distinctively understood in order to define the level or intensity of game playing.

Some negative psychosocial and psychological consequences of being addicted to gaming include loss of time at work; less attention to education leading to lower academic achievements and interests; ignoring close relations, family members and friends; decrease in rest and sleep; depression; ignoring life goals; increasing loneliness; aggressive behavior; maladaptive cognition; inattention; and suicidal thoughts. Although many studies have been conducted on the relationship between health and video games, few have used nationally representative samples of players. This study created a difference in the research literature because a nationally representative sample was used. In addition, since there are few studies investigating the health of different groups of players, this study will contribute to this information. T value during correction. The results of this study are based on a sample of patients seeking treatment for online gaming problems, so they may be useful for similar patients.

## The Review of Literature

1. The rise in popularity of online gaming in the 2000s coincided with the emergence of online gaming research showing the negative consequences, consequences, and risk-related implications of excessive gaming. The establishment of specialized medical centers in Southeast Asian countries, the United States, and Europe demonstrates the need for professional services. Some believe that only by understanding the appeal, background and neurobiological effects of online games can we understand and the consequences of addiction. The aim of this review is to use the method to gain a deeper understanding of the current perception of online gaming, including the attractiveness of online games, an overview of online addiction, neuroimaging findings, and current diagnoses. The US Framework has been adopted by the Psychiatric Association. Research shows that a person's environment is important in distinguishing between excessive play and gaming, and that the gaming space may be particularly important to gamers depending on their lives and hobbies. The context of the culture is also important because it provides players with a unique game by involving them in a community of beliefs and practices. Neuroimaging studies show similarities between the molecular, neural circuits, and behaviors of online addiction and other drug addictions, including chemical addiction. These findings support the current view on understanding Internet gaming from a biological perspective. The benefits of online games include increasing the credibility of research, eliminating individual stigma, improving the quality of care, and creating public motivation for healthcare, healthcare, and health insurance. The best way to get here is not only to conduct research that will prove the neurobiological effects of online games and establish a preliminary diagnosis, but also to have in-depth access to the meaning, content and practice of the game.
2. Video games have become popular pastimes in many parts of the world, and a growing body of scientific research is examining the small number of people who have problems with too much activity. This study investigated the prevalence and predictors of video game addiction in a sample of gamers (N = 3389) selected from the Norwegian National Population Register. The results showed that hobby players were 1.4%, problem players 7.3%, casual players 3.9%, and regular players 87.4%. Gender (male) and age (young age) were associated with addiction, problems, and involvement in players. Place of birth (Africa, Asia, South and Central America) is well associated with addicts and problem players. Video addiction was negatively correlated with agreeableness and positively correlated with neuroticism. Poor mental and physical health has been linked to gaming problems and compulsive gaming. These cases provide insight into the video game field and can help inform how to identify individuals at risk of addiction.

3. The aim of this study is to develop and validate a measurement tool using computers and video cameras. Inspired by early gaming research and research, we developed 21 items to measure 7 key factors (e.g., optimism, perseverance, emotional regulation, returns, cancellations, conflicts, and problems). The structure of the scale was examined in two independent samples of young players (N = 352 and N = 369). In both examples, a quadratic model best describes our data. The 21-item scale as well as the shorter 7-item version also showed good reliability. Additionally, both versions show similar values in the relationships represented in the model by usage, loneliness, life satisfaction, and good and bad relationships.
4. Internet gaming disorder is a growing problem that can have significant impacts on young people and their families. There is an urgent need to improve current treatment; these are currently hampered by a lack of research in this area. The relationship between symptoms, psychological and behavioral characteristics, and treatment and changes in these patients needs to be carefully analyzed. The purpose of this study was threefold: (1) to compare the symptoms and characteristics of young patients with Internet gaming problems with healthy controls; (2) evaluate the effectiveness of cognitive-behavioral interventions in reducing symptoms; (3) Compare treatment outcomes with and without the assistance of parent psychoeducational groups. The final sample included 30 consecutive patients and 30 healthy controls admitted to specialized mental health centers in Spain. The experimental group received information about the behavior. The experimental group was divided into two groups (N = 15) depending on whether the parent psychoeducation group (continuous access) was added or not. Million Adolescent Personality Questionnaire (MACI), Symptom Scale-Revised (SCL-90-R), State-Trait Depression Index (STAI), etc. points. Medical and psychological measures are off. Patients were re-evaluated after treatment (excluding the MACI questionnaire). Compared with healthy controls, patients did not differ in symptoms at baseline but had higher scores on the Personality (Introversion and Inhibition), Identity Confusion, Self-Deprecation, and Peer Distrust, and Performance Scale and ego dimensions. In the experimental group, regardless of whether the parents were in the psychoeducation group, there was a significant difference in pre- and post-change assessments on the SCL-90-R scale hostility, psychoticism, and global violence index, as well as Internet gaming problem scores. . More  
e There were no differences between the experimental groups in terms of pre-test and post-test changes. However, it was observed that knowledge of waste during treatment was higher in the group that did not receive any psychological training from their parents. The results of this study are based on a sample of patients seeking treatment for online gaming problems, so they may be useful for similar patients.

## Methodology

This dataset includes information about gender, age, frequency, game name, hours played, addiction, objective. Based on the attributes we can predict it and the dataset is prepared by own.

	Age	Gender	frequency	name of game	hours played	Addiction	objective
0	22	0	1	1	8	1	0
1	21	0	1	2	7	1	1
2	23	0	1	3	7	1	1
3	23	0	0	4	4	0	1
4	23	0	1	4	4	0	1
...	...	...	...	...	...	...	...
94	21	0	1	5	6	1	3
95	23	0	1	5	8	1	1
96	23	0	1	5	6	1	1
97	23	0	1	4	3	0	1
98	23	0	1	4	8	1	1

Table1

### Feature Selection

Relevant features are selected based on their importance in predicting game addiction. Features such as gender, age, frequency, name of game, hours played, addiction, and objective are identified as crucial factors in determining addiction likelihood.

### Algorithm

Here we can use a Decision tree machine learning algorithm. A Decision Tree Classifier is chosen as the machine learning model due to its ability to handle both numerical and categorical features and its interpretability. The classifier is instantiated, and then trained on the training data using the fit method.

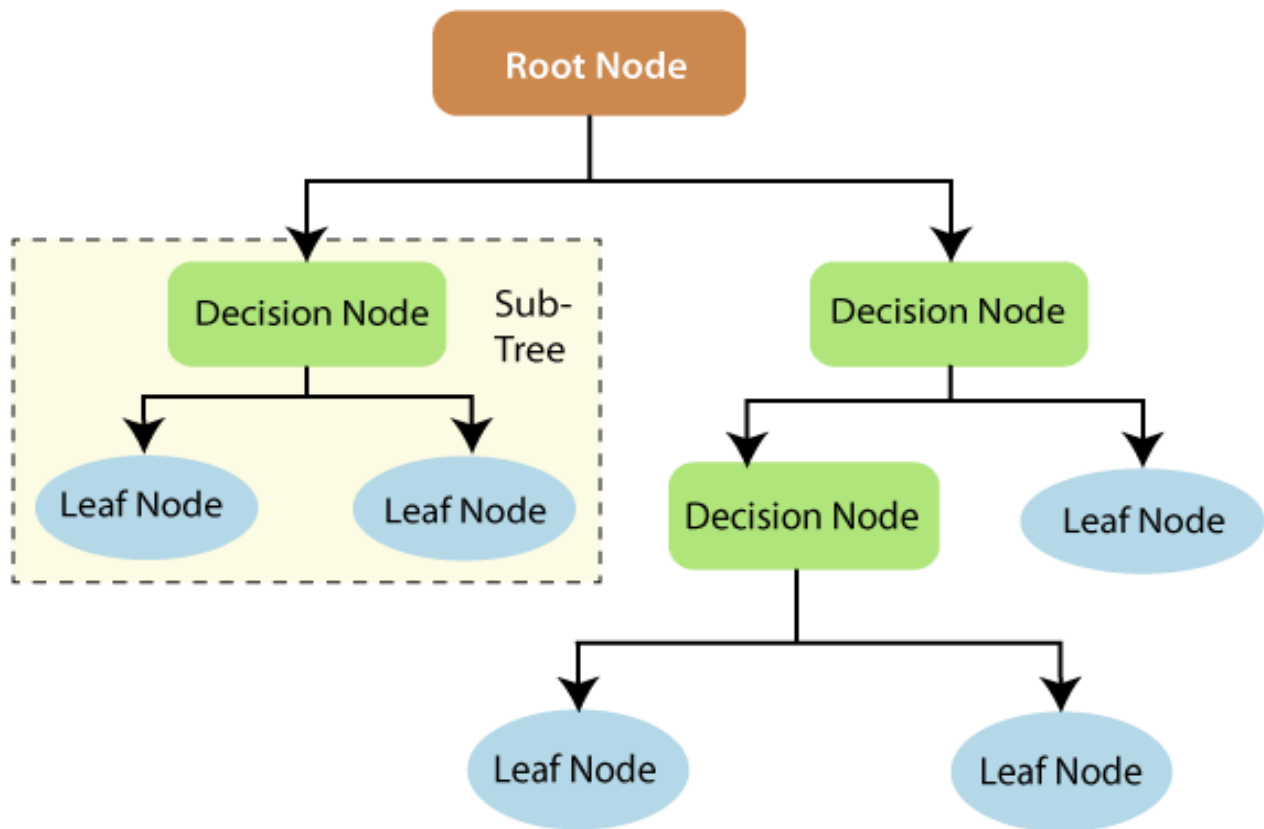


Figure 1

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