

# Green Computing – Going Green with Technology

Sree Rethanya.K<sup>1</sup>, Sreejith.S<sup>2</sup>

Department of Electronics and Communication Engineering, SRM Valliammai Engineering College, Kattankulathur,  
Chengalpattu district, Tamil Nadu, India<sup>1</sup>

Department of Computer Science and Engineering, SRM Valliammai Engineering College, Kattankulathur,  
Chengalpattu district, Tamil Nadu, India<sup>2</sup>

**Abstract:** Most people know that “going green” is important for the environment. But what many don’t realize is that it can also be important for businesses, both in terms of cost savings and being socially responsible. Green computing is the practice of using information technology in an environmentally sustainable way. This includes everything from reducing energy consumption to recycling old equipment. There are many benefits to green computing. Perhaps the most obvious is that it can save businesses money. For example, by reducing energy consumption, businesses can lower their utility bills. They can also save money on disposal fees for electronic waste. In addition, going green can help businesses build goodwill with consumers and other stakeholders who are interested in environmental sustainability. Finally, some government incentives are available for businesses that adopt green practices. Despite the benefits, there are some challenges associated with green computing. One is that it can require a significant upfront investment, which may not be feasible for all businesses. Additionally, changing business practices can be difficult and time-consuming. However, these challenges should not discourage businesses from doing their part to protect the environment through green computing practices.

**Keywords:** Green Computing, Energy Efficiency, Data Centre

## I. INTRODUCTION

As technology has become an increasingly integral part of our lives, we need to be aware of the environmental effects that come with it. Green computing is a way to reduce energy consumption and emissions associated with computing by making more efficient use of hardware, software, and other resources. In this blog post, we’ll discuss what green computing is, how it can help protect the environment, and some tips on how you can make your own computing more sustainable. We will also explore why green computing is so important in today’s digital world. By the end of this post, you’ll have a better understanding of green computing and its potential impact on the environment.

It’s no secret that our planet is in crisis. We are facing a climate emergency and as such, we must start to make conscientious decisions about how we use energy. One area which has seen increased interest in recent years is green computing. Green computing refers to the practice of designing, manufacturing and using computers, computer systems and associated components in an environmentally friendly way. This can involve everything from the design of the equipment itself through to the way it is used and the way it is disposed of when it reaches the end of its life. In this Paper, we will explore green computing in more detail, looking at what it involves, its benefits and some tips for how you can make your own computing more sustainable.

## II. APPLICATIONS

The concept of green computing is not only about saving energy, but also about using computing resources in a more environmentally sustainable way. There are many different applications for green computing, including:

**-Data centres:** Data centres account for a large portion of the energy used by the IT sector. By making data centres more efficient, we can reduce their energy consumption and greenhouse emissions.

**-Servers:** Servers are another major source of energy consumption for the IT sector. Making servers more efficient can help reduce their energy use and improve their overall sustainability.

**-Cloud computing:** Cloud computing has the potential to make IT infrastructure more sustainable by reducing the need for physical hardware and associated energy use.

-Mobile devices: Mobile devices are becoming increasingly popular and account for a growing share of energy use in the IT sector. Improving the efficiency of mobile devices can help reduce their environmental impact.

As the world becomes more digital, energy consumption by electronic devices has become a significant contributor to greenhouse gas emissions. The good news is that there are lots of ways to make your computing more green. Here are a few tips:

1. Use a laptop instead of a desktop computer. Laptops use less energy than desktop computers and they're more portable, so you can take them with you when you travel.
2. Adjust your computer's power settings. Many computers have power-saving features that can significantly reduce energy consumption.
3. Use cloud-based services. Cloud-based services use less energy than traditional software applications because they don't require users to download and install software on their own computers.
4. Purchase green electronics. Look for electronic devices that are Energy Star certified or have other environmental certifications.
5. Recycle your old electronics. Make sure to recycle your old electronics properly so that harmful materials don't end up in landfills.

### **III. CURRENT TRENDS IN GREEN COMPUTING**

As more and more people become aware of the importance of sustainability, green computing has become a popular trend. Green computing is the practice of using computers and other electronic devices in an environmentally responsible way. This includes reducing energy consumption, recycling and disposing of electronic waste properly, and using renewable energy sources.

There are many ways to make your computing habits greener. One easy way is to simply turn off your computer or other devices when you're not using them. This can help save energy and prevent electronic waste from needlessly being generated. You can also adjust your power settings so that your devices use less energy when they're in standby mode or not in use.

If you're looking to buy new electronics, look for Energy Star certified products. These products have been designed to use less energy and generate less electronic waste. And when it comes time to dispose of your old electronics, be sure to do so responsibly. Many communities have e-waste recycling programs that can help you recycle your old computers, printers, and other devices safely and properly.

### **IV. DISADVANTAGES**

There are a few disadvantages to green computing. One is the cost. Going green can be expensive, especially if you have to buy new equipment. Another disadvantage is that it can be time-consuming. For example, if you want to reduce your paper usage, you might have to print less and recycle more. This can take some extra time and effort. Finally, some people might not be willing to change their habits. They might not see the need to go green or they might not want to put in the extra effort.

Green computing, also known as green IT, is the practice of environmentally sustainable computing. Green computing reduces the electricity consumption of computers and servers, as well as the amount of e-waste they generate.

It sounds great in theory, but there are some disadvantages to green computing that you should be aware of before making the switch. The biggest disadvantage to green computing is the upfront cost. Energy-efficient hardware and software can be more expensive than their traditional counterparts. You may need to invest in new equipment or make changes to your existing set-up to be able to take advantage of green IT practices.

Another downside is that going green can sometimes mean sacrificing performance. For example, using a power-saving mode on your computer might cause it to run slower than normal. And recycling old electronics can result in data loss if they're not properly erased first. Finally, some people find it difficult to change their habits when it comes to using energy-efficient devices. It can be hard remembering to turn off your computer when you're not using it, or unplugging appliances when they're not in use. But with a little effort, these small changes can make a big difference for the environment – and your wallet.

## V. CURRENT TRENDS IN GREEN COMPUTING

As more and more people become aware of the importance of sustainability, green computing has become a popular trend. Green computing is the practice of using computers and other electronic devices in an environmentally responsible way. This includes reducing energy consumption, recycling and disposing of electronic waste properly, and using renewable energy sources.

There are many ways to make your computing habits greener. One easy way is to simply turn off your computer or other devices when you're not using them. This can help save energy and prevent electronic waste from needlessly being generated. You can also adjust your power settings so that your devices use less energy when they're in standby mode or not in use.

If you're looking to buy new electronics, look for Energy Star certified products. These products have been designed to use less energy and generate less electronic waste. And when it comes time to dispose of your old electronics, be sure to do so responsibly. Many communities have e-waste recycling programs that can help you recycle your old computers, printers, and other devices safely and properly.

## VI. CHALLENGES IN GREEN COMPUTING

As with any new technology, there are challenges associated with green computing. One of the biggest challenges is getting people to change their habits and adopt new technologies. Change can be difficult, especially when it comes to something as ingrained as the way we use computers. But it's important to remember that even small changes can have a big impact.

Another challenge is the cost of green technologies. While the cost of some green technologies has come down in recent years, they still tend to be more expensive than traditional options. This can be a barrier for businesses and individuals who are interested in going green but may not have the budget for it. Finally, there's the issue of data centre energy consumption. Data centres use a lot of energy to power all of their servers and other equipment. And as more and more businesses move their operations online, data centre energy consumption is only going to increase. Finding ways to make data centres more energy efficient is a critical part of reducing our overall carbon footprint.

## VII. DISCUSSION

The term "green computing" refers to the environmentally responsible use of computers and related resources. This includes the practices of using energy-efficient computing devices and recyclable or biodegradable materials in their manufacture. It also encompasses measures to reduce the use of harmful chemicals, minimize e-waste, and promote recycling.

The growing awareness of the need to protect our environment has led to a surge in interest in green computing. As businesses and individuals alike become more conscientious about their impact on the planet, they are increasingly looking for ways to reduce their carbon footprint. Green computing offers a way to do this by making more efficient use of resources.

While there are many benefits to green computing, it is important to remember that no single solution is perfect. For example, while recycling can help reduce e-waste, it takes energy and resources to process recycled materials into new products. Similarly, while energy-efficient devices may use less power, they may still require rare metals or other materials that can have a negative environmental impact when extracted from the earth. The key is to strike a balance between maximizing efficiency and minimizing harm. The good news is that green computing is not only good for the environment – it can also be good for your bottom line. By using fewer resources and generating less waste, you can save money on operating costs while also doing your part to protect our planet.

## VIII. CONCLUSION

Green computing is a great way to reduce the environmental impact of our technological use and make sure we are practicing sustainability. With many simple steps, from changing your device settings to investing in eco-friendly devices, green computing can help us all do our part in making the world a better place. We hope this Paper has inspired you to start considering ways in which you can make your computer usage more sustainable and greener for both yourself and for the environment.

**REFERENCES**

- [1]. Berl A, Erol G, The Computer Journal, 2009, Volume 53, Issue 7, pp. 18-25
- [2]. Murugesan S, —Harnessing Green IT: Principles and Practices, IEEE IT Professional, January-February 2008, pp 12-17.
- [3]. Nanath, Radha krishna R. Pillai. "The influence of green IS practices on competitive advantage: mediation role of green innovation performance."
- [4]. Sofia, A. Sathya, and Kumar. "Energy efficient task scheduling to implement green cloud." Asian Journal of Research in Social Sciences and Humanities.
- [5]. Sharma, Prateek, et al. "Design and Operational Analysis of a Green Data Center." IEEE Internet Computing (2017).
- [6]. Kumar, Lakshmi "Software Level Green Computing with Multi-Core Processors using Fork-and-Join Framework." (2017).