

# **Science Fiction as an Introduction to Future Technology**

## Term Paper

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I avail this opportunity to convey my sincere thanks to academic department along with faculties for including the course on Science Fiction in our curriculum.

## **Abstract**

In this document I will describe that how science fiction is really helpful to introduce new technologies which might became true in the future. I will establish the statement **Science Fiction as an Introduction to Future Technology**. I will try to render the role of Science Fiction in growth of modern era technology.

Science fiction gives a way to think about the future and future technology. The future is all about to people and how people visioning about the future that is very incredible powerful.

*Keywords:* Science Fiction, Future Technology, Prediction, Futurist

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# 1 Introduction

Science fiction is a genre of fiction that will explores the imaginary possibilities and the consequences of developments in science and technology. It is an extremely broad category of genre, including other areas of fiction like fantasy, horror, and memory. Whereas the setting of science fiction stories may occur in the future, in an alternate galaxy or in an altered present, tend to reflect a mixture of universal questions regarding humanity and the contemporary contexts. Put another way, science fiction plays with answers to the big scientific questions we ask of our imaginations: WHAT WOULD HAPPEN IF ...?[NEALS, 2016]

Hypothesis of this document is “Science Fiction as an Introduction to Future Technology.” In this document I will describe that How science fiction is really helpful to introduce new technologies which might became true in the future. I tried to render the role of science fiction in growth of modern era technology. By giving some examples I tried to establish how science fiction transformed into the real technology. Moreover, I will try to connect the Sci-Fi concept with the Computer Science and how helpful for Computer Science. In this section I will briefly introduce the topic and connect with the next section.2 I will do some literature review that what literature says about Science fiction and future technology. After that in survey analysis part I will show what people says then I conclude my hypothesis.

As a undergraduate student of Computer Science, I know most of the student totally focused on skills and various kind of tools. Only few students are exposed to research in the field, and learn how to navigate the research. I describe how science fiction opens a gateway to future technology and technological research for

future technology. Science fiction gives a way to think about the future technology. The power of science fiction as a tool for thinking critically and creatively about the future of science, technology and society. The technology all about people and how people visioning about future incredible powerful.

In this modern era, technology is growing so fast. People are using various kinds of technologies but they don't know what is going to happen tomorrow, next year or even millennium from now. But how will we know what it's like to live in those futures? Science Fiction plays very important role to give answers of such question.

A lot of people think science fiction writers try to predict the future in their stories. But accurately predicting the future is extremely difficult.[Chan, 2016]

In this respect, science fiction is useful as a tool, not for predicting the future, but for instead modeling a vast range of possible futures. As our society develops and changes, science fiction is there to show us what will happen if we continue along our current path.

Yes, science fiction can be a way to explore new technology, but it can also be a way to warn the world of coming dangers. Back in the 1980s, science fiction writers were already discussed global warming, nuclear destruction, cloning, cyberspace, and related field to Artificial Intelligence. Today, we face a situation where the advance of technology is so quickly, and the dangers of war and climate change so terrible, that we have no idea what will happen in the next 20 to 50 years, moreover in the next 100 or 1000 years.

- What happens if we build a computer that is smarter than us?
- What happens if we compare our brains with artificial processors and quadruple our IQ's?

Nobody knows what are the answers of such questions. Futurists and philosophers can tell us that what will be very likely outcomes. But to really understand we have to put ourselves to them. After hundred years time later may be people will different mentality, different physically. Or they may be long-lived than 100 years and healthy. They might have processors or some communication devices in their body or even in their brains.[Liman, 2002] They might changed their genes. Who knows?

They will have relationships with technology and the environment that we can barely imagine. Like we can look back at the way things have changed in our own lifetime. Look at the rises of mobile phones. They have dramatically changed the way we relate the our friends, our society, and our surrounding.

What developments will transform our society over next decade? We can guess but we don't really know.

For the last many years, science fiction writers have been trying to guess the technological changes that will shape our lives in the years to come.

Science fiction writers put a lot of serious thought into the future. But the truth is, they do not know what will happen. They are trying to predict. There are many correct predictions sometime they trying to warn us. But prediction is not a task of science fiction writers are trying to entertain as much as possible.

The main job of science fiction writer is to imagine and tell stories. The future is truly an undiscovered country but they have one of the best tools, Science Fiction.

## 2 Literature Review

Having the powerful tool like Science Fiction our writer trying to introduce the future technology that how our future will look like. Jules Verne mentioned the Spacecraft in his novel[From the Earth to the Moon, 1865] in 1969 - 1<sup>st</sup> used on Apollo 11 mission the Lunar modules launched from Florida, return as splashdown capsules.

Several sci-fi films and novels have very accurately predicted and paved the way for many of the pieces of technology we enjoy today. This isn't a new phenomenon either - the inventor of the first liquid-fuelled rocket, American Robert H. Goddard, was inspired by H.G. Wells' science fiction novel War of the Worlds (1898). More recent examples include the 3D gesture-based user interface used by Tom Cruise's character in Minority Report (2002), which is found today in most touch screens and the motion sensing capability of Microsoft's Kinect. Similarly, the tablet computer actually first appeared in Stanley Kubrick's 2001: A Space Odyssey (1968) and the communicator which we've come to refer today as the mobile phone was first used by Captain Kirk in Star Trek (1966).

In 1888 the novel Looking Backwards by Edward Bellamy there was a concept of Credit cards that became true in 1960s - the credit card invented. In 1965 - 1<sup>st</sup> satellites was launched which was the idea of author Arthur C. Clarke in the 2001: A Space Odyssey.

The Last but not least which was the concept of Raymond Kurzweil in the novel The Age Of Intelligent Machines(1990) the Computer beating best human chess players by 2000 the IBM's Deep Blue wins that has huge impact.[Hunter, 2015]

There are hundred of examples of such invention which were before some where

in the Science Fiction literature.[Prediction in fiction, 2016]

While attending the Intelligent Environment Conference Brian David proposed that we[Rushkoff et al., 2012] could use Science Fiction as a design tool. This design tools might helpful for the development of technology and new products. The idea was simple that we could write Science Fiction stories based on science fact to explore the impact of science on the human and culture.

There are many scientists of 20<sup>th</sup> century were inspired by Science Fiction. Similarly, Science Fiction authors commonly use emerging science and research to motivate or inspire stories, novels, and movies etc. Science and Science Fiction were being used together as a way to develop a deeper understanding and the outcomes also consequences.

In the case of the tech portrayed in several of these sci-fi movies, such as Minority Report and 2001: A Space Odyssey, it was not random predictions. The directors - Stephen Spielberg and Stanley Kubrick - consulted with industrial designers, futurists and advertising specialists, to try to visualize what the future world would look like.

Again, a great example to explain this is to look at sci-fi films. The futuristic medical technology products presented in sci-fi, highlight possible real future scenarios. For instance, the DNA-structured society depicted in Gattaca (1997) on one hand foretells the experimentation with bio-metrics that today's governments are pursuing; and on the other hand depicts what society could look like if medical technology is taken to extremes.

The combination of both made a Science Fiction prototype and could not speed the development of the technology but it could actually produce better results and more successful products.[Johnson, 2011]

### 3 Survey Analysis

It is very important to know thoughts of people surrounding us, what they are thinking? what are their opinions? The best way to answer these questions is to survey in the context of relevant topic. This survey will fair enough to distinguish and clear many aspects of researcher regarding the topic.

For any kind of survey it is very important point that who are our target audience? and what is their occupation? in which field they are working? what is the age-group? Also I have formulated set of some common questionnaires.<sup>1</sup>

So, I decided the students and faculty of IIIT Vadodara as target audience and no. of people in the target audience will be more than 40 in which survey sample would be 40% 3<sup>rd</sup> year students, 30% 2<sup>nd</sup> year students, 20% 1<sup>st</sup> year students and 10% faculties. All the student have 18-29 years age-group including faculties.

Survey questionnaire really play a very important role like questions should be relevant to our target audience not for confuse them or out of range. Also questionnaire should be informative and according to research topic. According to survey I have concluded some relevant points which are very close to prove my hypothesis.

I have included some basic questions in survey questionnaires like: Do you familiar with Science Fiction?, Do you like Science Fiction? etc.

Around 90% of target audience know Science Fiction and 88% people actually like Science Fiction. These people knows Science Fiction in different types like Novel, Movies, TV Serial, etc. Most of the people watch movies and the ratio of TV Serial and Novel reading almost equal.

I have formulated some specific questions which are very relevant to topic of

this work. I will analyze these questions individually.

### 3.1 Survey Question - 11

1 The question was that **Can we know in advance exactly how the future is going to look like, and what about future technology?** 1 And I have provided 3 multiple options which are following:

- Yes, but only if we have full knowledge of the present
- Yes, but only if we read science fiction
- No, we can only provide educated guesses and scenarios for the future

Approximately 44% people were in favor of the 1<sup>st</sup> option and 54% people in favor of the 3<sup>rd</sup> option and 2% people in favor of the 2<sup>nd</sup> option. Like many novels have predicted many correct predictions[[List of predictions, 2016](#)] about the future and future technology but a lot of people think science fiction writers try to predict the future in their stories. But accurately predicting the future is extremely difficult.[[Chan, 2016](#)] Many technologies were introduced in Sci-fi novel later on those technologies were invented Sci-fi gave some insight to those invention.

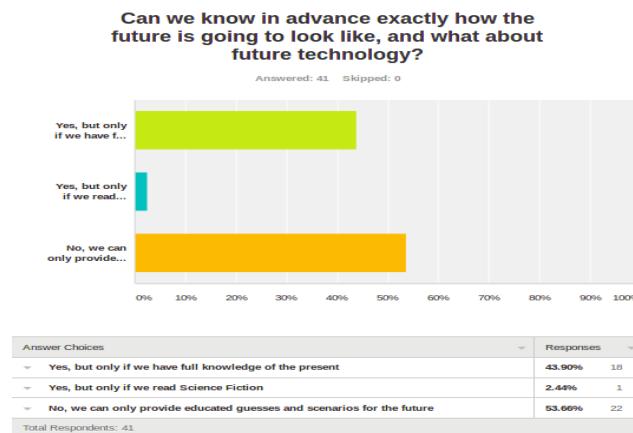


Figure 1: Question 11

### **3.2 Survey Question - 13**

1 This question was all about the power of Sci-fi that how Sci-fi help us to better understanding the future. The question was **Why does science fiction help us to better understand the future and future technologies?** 2 and four multiple options were provided those were following:

-Science fiction shows us many possible futures from which we can learn how to better navigate our choices towards the most desirable one

-Science fiction is just fantasy tales

-Science fiction can tell us exactly what the future is going to look like

-Anything else:

Approximately 83% people were selected 1<sup>st</sup> option that signifies that Sci-fi shows us many possible futures from which we can learn how to better navigate our choices towards the most desirable one. Sci-fi writers uses their imaginations and by the proper study of present they innovate new future and future technology this is how Sci-fi is really helpful for the society as well as student of science. The specific for the student of Computer Science it is very important to know that whether technology, in terms of Artificial Intelligence, Cyborg, or Cyberpunk etc. are helpful or how harmful to society. So it is very helpful to answer some ethical questions.

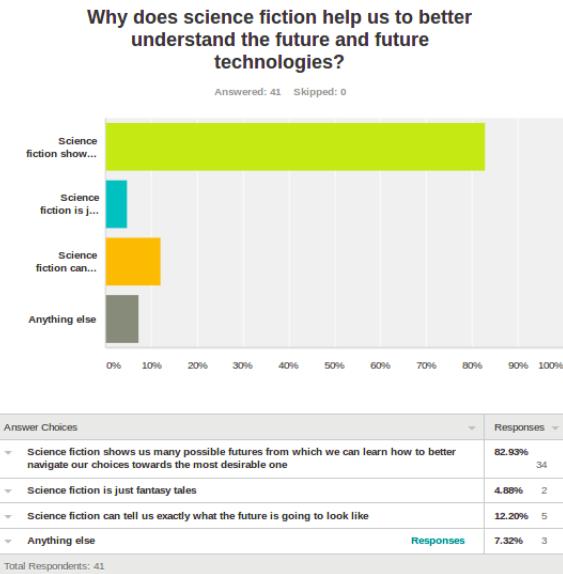


Figure 2: Question 13

### 3.3 Survey Question - 14

1 This question was related to futurist and forecast. What people thought about the forecast and how futurist made them? Question was **How do futurists make forecasts?**<sup>3</sup>

-By reading in tea leaves and looking into crystal balls

-By analyzing technological trends and social trends

-By consulting with scientists, thought leaders, and other wise men and women

Most of the audience thought that futurist forecasts any kind of new technology by analyzing technological trends and social trends and consulting with scientists, thought leaders, and other wise men and women. It is obvious that it is very important to know the trend of the present technology and society.

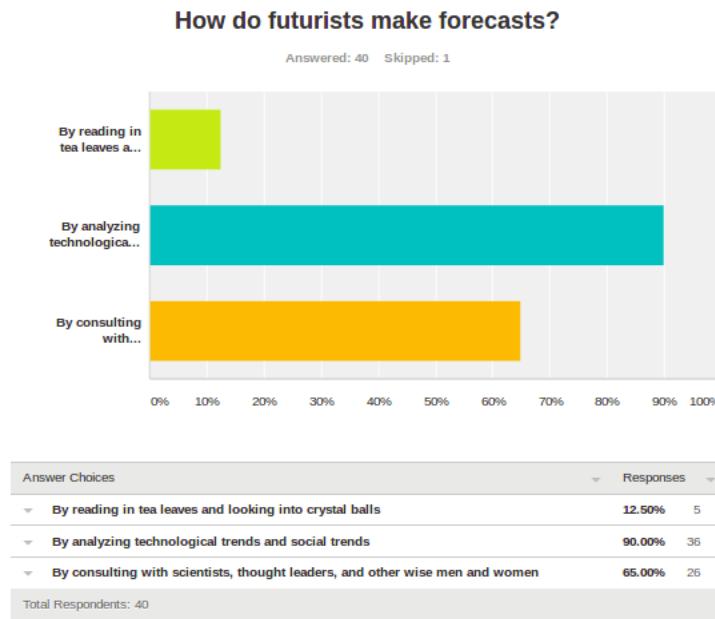


Figure 3: Question 14

### 3.4 Survey Question - 15

1 This question was subjective and I have asked that

Will artificial intelligence take over the world? What will stand in its way? (This is an incredibly popular subject among science fiction writers.)

Almost half of the people thinking that Artificial Intelligence will take over the world. Also many people said that if we can create the AI so we can destroy also. Sci-fi is the way by which we can show that what will be consequences? So let the sci-fi writers do their job.

I have used offline mode for this survey and for the analysis I've used survey monkey [Survey Monkey, 2016] online source.

[Survey Part-1](#)[Survey Part-2](#)

## 4 Conclusion

We may not immediately believe it, but future technologies are a lot closer to science fiction than people think.

Many examples are proving that really sci-fi help us to know what might be there in the future. Science fiction stimulates the imagination about extraordinary views of the future. The value of science fiction has been also recognised in the rise of a new method for designing new technologies. There are many corporation which are working with sci-fi ideas and converted into real technology. The most popular company INTEL is the one of them, The Tomorrow Project[Rushkoff et al., 2012].

Therefore science fiction is not fiction but a technique for thinking ahead, predicting future technologies, potentially influencing policy, but most importantly creating debate by asking what if?

In this way, science fiction can be used as a tool to help design future societies and technologies, giving the public a say on it too.

So, as several sci-fi movies have foreshadowed modern day technologies, next time you watch a sci-fi film pay a closer attention as what is portrayed, as science fiction is fast becoming a science fact.

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# 1 Questionnaire

## Science Fiction as an Introduction to Future Technology

### About you

1. Your name: \_\_\_\_\_
2. Branch name: \_\_\_\_\_
3. In which semester you are: \_\_\_\_\_
4. College name: \_\_\_\_\_
5. Age
  - below 17
  - 17-25
  - above 25
6. Are you in a good mood right now?  absolutely  not really because: \_\_\_\_\_
7. Do you know about the Science Fiction?
  - Yes
  - No
  - Just heard
8. Do you like Science Fiction?
  - Yes
  - No
  - Other: \_\_\_\_\_
9. What kind of Science Fiction do you like?
  - Novel
  - Movie
  - TV serial
  - Other: \_\_\_\_\_
10. Do you ever watch/read Science Fiction?
  - Yes
  - No
  - If Yes, Mention name: \_\_\_\_\_
11. Can we know in advance exactly how the future is going to look like, and what about future technology?
  - Yes, but only if we have full knowledge of the present
  - Yes, but only if we read science fiction
  - No, we can only provide educated guesses and scenarios for the future
12. Which technological advances were NOT forecast by science fiction writers?
  - Mobile Phone
  - iPad
  - Antidepressants
  - Time Machine
  - Any other: \_\_\_\_\_
13. Why does science fiction help us to better understand the future and future technologies?
  - Science fiction shows us many possible futures from which we can learn how to better navigate our choices towards the most desirable one

- Science fiction is just fantasy tales
- Science fiction can tell us exactly what the future is going to look like
- Anything else: \_\_\_\_\_

**14. How do futurists make forecasts?**

- a By reading in tea leaves and looking into crystal balls
  - b By analyzing technological trends and social trends
  - c By consulting with scientists, thought leaders, and other wise men and women
  - d a and c
  - e b and c
- Any other: \_\_\_\_\_

**15. Will artificial intelligence take over the world? What will stand in its way? (This is an incredibly popular subject among science fiction writers.)**

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**16. Anything else or any suggestions**

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## 2 Sample Questionnaires

Survey questionnaire 1

### Science Fiction as an Introduction to Future Technology

**About you**

1. Your name: Dr. ASHISH PHOPHALA
2. Branch name: \_\_\_\_\_
3. In which semester you are: \_\_\_\_\_
4. College name: IIT-V
5. Age
  - below 17
  - 17-25
  - above 25
6. Are you in a good mood right now?  absolutely  not really because: \_\_\_\_\_
7. Do you know about the Science Fiction?
  - Yes
  - No
  - Just heard
8. Do you like Science Fiction?
  - Yes
  - No
  - Other: Moderate
9. What kind of Science Fiction do you like?
  - Novel
  - Movie
  - TV serial
  - Other: \_\_\_\_\_
10. Do you ever watch/read Science Fiction?
  - Yes
  - No
  - If Yes, Mention name: Movie
11. Can we know in advance exactly how the future is going to look like, and what about future technology?
  - Yes, but only if we have full knowledge of the present
  - Yes, but only if we read science fiction
  - No, we can only provide educated guesses and scenarios for the future
12. Which technological advances were NOT forecast by science fiction writers?
  - Mobile Phone
  - iPad
  - Antidepressants
  - Time Machine
  - Any other: \_\_\_\_\_
13. Why does science fiction help us to better understand the future and future technologies?
  - Science fiction shows us many possible futures from which we can learn how to better navigate our choices towards the most desirable one

Thank you for your valuable time and response.

- Science fiction is just fantasy tales
- Science fiction can tell us exactly what the future is going to look like
- Anything else: But some time that may be good or bad.

14. How do futurists make forecasts?

- a By reading in tea leaves and looking into crystal balls
- b By analyzing technological trends and social trends
- c By consulting with scientists, thought leaders, and other wise men and women
- d a and c
- e b and c
- Any other: \_\_\_\_\_

15. Will artificial intelligence take over the world? What will stand in its way? (This is an incredibly popular subject among science fiction writers.)

Definitely. The major problem is to make things to work for humanity. AI must grow further for helping society.

16. Anything else or any suggestions

Stick to your fundamentals of science/engg and let AI to help our society by your novel implementable ideas

## Science Fiction as an Introduction to Future Technology

### About you

1. Your name: Shalinee Singh
2. Branch name: CS
3. In which semester you are: 6th
4. College name: IUTV
5. Age  18  19  20  21  22  23  24  25
6. Are you in a good mood right now?  Absolutely  not really because: \_\_\_\_\_
7. Do you know about the Science Fiction?  
 Yes  
 No  
 Just heard
8. Do you like Science Fiction?  
 Yes  
 No  
 Other: \_\_\_\_\_
9. What kind of Science Fiction do you like?  
 Novel  
 Movie  
 TV serial  
 Other: My imagination
10. Do you ever watch/read Science Fiction?  
 Yes  
 No  
 If Yes, Mention name: House, flash, Starwars, Star trek, Terminator, Avengers
11. Can we know in advance exactly how the future is going to look like, and what about future technology?  
 Yes, but only if we have full knowledge of the present  
 Yes, but only if we read science fiction  
 No, we can only provide educated guesses and scenarios for the future
12. Which technological advances were NOT forecast by science fiction writers?  
 Mobile Phone  
 Ear-bird  
 iPad  
 Antidepressants  
 Any other: \_\_\_\_\_
13. Why does science fiction help us to better understand the future and future technologies?  
 Science fiction shows us many possible futures from which we can learn how to better navigate our choices towards the most desirable one  
 Science fiction is just fantasy tales  
 Science fiction can tell us exactly what the future is going to look like  
 Anything else: \_\_\_\_\_

Thank you for your valuable time and response.

## 14. How do futurists make forecasts?

- a By reading in tea leaves and looking into crystal balls
- b By analyzing technological trends and social trends
- c By consulting with scientists, thought leaders, and other wise men and women
- d a and c
- b and c

Any other: \_\_\_\_\_

## 15. Will artificial intelligence take over the world? What will stand in its way? (This is an incredibly popular subject among science fiction writers.)

Yes. AI is becoming so popular that some day we will have AI devices everywhere. Only few people who can see the harm and loss of humanity in that will stand in its way.

## 16. Anything else or any suggestions

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## Science Fiction as an Introduction to Future Technology

### About you

1. Your name: Ayyar Meghna P
2. Branch name: Computer Science
3. In which semester you are: 4th Semester
4. College name: IIT-VADODARA
5. Age below 17  
 17-25  
 above 25
6. Are you in a good mood right now?  absolutely  not really because: \_\_\_\_\_
7. Do you know about the Science Fiction?  
 Yes  
 No  
 Just heard
8. Do you like Science Fiction?  
 Yes  
 No  
 Other: \_\_\_\_\_
9. What kind of Science Fiction do you like?  
 Novel  
 Movie  
 TV serial  
 Other: \_\_\_\_\_
10. Do you ever watch/read Science Fiction?  
 Yes  
 No  
 If Yes, Mention name: Doctor who, Hitchhiker Guide to the Galaxy etc.
11. Can we know in advance exactly how the future is going to look like, and what about future technology?  
 Yes, but only if we have full knowledge of the present  
 Yes, but only if we read science fiction  
 No, we can only provide educated guesses and scenarios for the future
12. Which technological advances were NOT forecast by science fiction writers?  
 Mobile Phone  
 iPad  
 Antidepressants  
 Time Machine  
 Any other: Cameras (Maybe)
13. Why does science fiction help us to better understand the future and future technologies?  
 Science fiction shows us many possible futures from which we can learn how to better navigate our choices towards the most desirable one

Thank you for your valuable time and response.

- Science fiction is just fantasy tales  
 Science fiction can tell us exactly what the future is going to look like  
 Anything else: \_\_\_\_\_

14. How do futurists make forecasts?

- a By reading in tea leaves and looking into crystal balls  
b By analyzing technological trends and social trends  
c By consulting with scientists, thought leaders, and other wise men and women  
d a and c  
 b and c  
 Any other: \_\_\_\_\_

15. Will artificial intelligence take over the world? What will stand in its way? (This is an incredibly popular subject among science fiction writers.)

Given a story like TERMINATOR it seems very likely that AI would take over the world. But it will still be the humans who would later on not like the total control of the AI and attempt to stop it. Seeing recent trends AI will be a big part of our lives at a later stage but total control still may not happen if caution is exercised.

16. Anything else or any suggestions

Science fiction movies many times deal with doomsday scenarios wherein the scientists would go too far in the name of research. Also time travel seems paradoxical always and no one seems to agree on its far reaching impacts.

Thank you for your valuable time and response.