

**UNIVERSITY OF
WESTMINSTER**



**UNIVERSITY OF WESTMINSTER &
INFORMATICS INSTITUTE OF TECHNOLOGY**

Trends In Computer Science

4COSC008C.2

1 : Employability and career planning- Reflective writing

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Submission Date	22 nd April 2022

1 : Employability and career planning- Reflective writing

Many people overlook this crucial aspect of employment choice. Making a conscious effort to appraise their self can help them to avoid unhappiness. There are several things you can do right now to discover more about yourself. Self-evaluation procedures can be used repeatedly to find the right career for you. There are many things are on Trends in Computer Science like Artificial intelligence and Robotics, Big data analytics, Computer-assisted education, Bioinformatics and Cyber Security. It's being able to express my distinctive traits clearly and effectively in terms of what i do well, what my value and what I am enjoying. Computers are major evolved to change the world by trends in Computer Science and it impacts on the world work market as well. I think Artificial Intelligence and Robotics become the major milestone in my career. Because it has the major impact on the industry like automated fields of car industry and satellite improvements. So, these are having potentials in future, and I would like to specialize in these categories by consider my outcomes to get career fulfilling in that filed.

Enrolling in specific courses that are directly relevant to the field of knowledge required in certain vocations is an obvious approach of exploring careers. I can choose from a variety of career paths by combining general education and computerised knowledge. Regardless of the ultimate major, general education is designed to provide all college graduates with comprehensive skills and abilities as well as a foundation of knowledge in a range of subjects. While some jobs demand a specific college major, many others do not. Examine my talents, values, and interests, as well as academic prerequisites and potential job options, while selecting course work. To achieve that I am planning to take optional modules as in Level 05 as Robotic Principles and then decide to follow the Applied robotics and Applied intelligence modules in the year of Level 06.

Workplace values include a wide range of distinct components. Advancement opportunities, autonomy, benefits, creativity, decision-making, flexibility in work hours, helping others, earnings, independence, influencing others, growth, job security, fulfillment, physical challenges, power and authority, prestige, professional accomplishment, public contact, recognition, working alone. Reading everything about occupations, talking to people, participating in field activities, and enrolling in crucial courses are the main ways to collect career information. When evaluating career information that is erroneous or outdated, caution should be applied. It would be helpful to achieve my career aims. There are many events and mentor sessions are carried out through the university like code rally, hackathon and Hackmax are some events to know the advancement in technology with the new ideas of different people. These events bring the good in coding skills and helpful to find new people in the field and

introduce the more connections also. Through the more connections of people, it would help to fulfill the career aims requirements and competitive surviving in the field.

After decided on a career path, the next step is to plan how I can train for it, gain experience in it, and eventually enter the field. In this step, I should figure out how much effort and what I will need to be successful in my chosen profession. What are the prerequisites in terms of education and experience? Which of the qualities required for that job do I already have, and which do I need to acquire? Additional schooling, internships, specific courses, or training are the best ways to get the qualifications. The answers to these questions I will decide in identifying and setting appropriate goals. I should create a timing and sequence outline after I have identified my career goals and defined the tasks that will help me to reach them. Obviously, I won't be able to complete everything all at once. Certain activities should obviously come first. Try to write it all down, outlining the actions that must take place, their right sequence, and the amount of time each will require. Finally, put my long- and short-term goals into action and track of progress as I can go.

My abilities, on the other hand, contain a variety of features and personal characteristics that provide me the most power. An undergraduate education entails more than just mastering my major's subject matter. It also entails learning and honing transferable abilities in a variety of industries outside than my major. If I take an accurate reading of my own experiences, I will be the best judge of my abilities. Talents that I have led to my success with shine. I would like to develop my personal skills like communication and know of more languages on programming and language too. Keep track of my accomplishments and log them in specific terms. This data will help me in negotiating the performance appraisals, salary, and promotions I want.

(800 words)

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2. AI and Ethics- report writing

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2. AI and Ethics- report writing

The ethics of AI and robotics is often focused on "concerns" of various sorts. Many such concerns turn out to be rather quaint, but some are correct and deeply relevant. The task of an article is to analyze the issues and to deflate the non-issues. The ethics of AI and robotics has seen significant press coverage but may end up undermining it. Current discussions in policy and industry are motivated by image and public relations. For a problem to qualify as a problem for AI ethics would require, we do not readily know what the right thing to do. "Artificial intelligence" is understood broadly as any kind of artificial computational system that shows intelligent behavior. The project of AI is to create machines that have a feature central to how we humans see ourselves, namely as feeling, thinking, intelligent beings. "Artificial intelligence may allow us to eliminate global poverty, massively reduce disease and provide better education," says Erik Brynjolfsson. While AI can be entirely software, robots are physical machines that move. Some robots use AI, and some do not.

While AI can be used to manipulate humans, it can also drive robots that are problematic if their processes or appearance involve deception, threaten human dignity, or violate the Kantian requirement of respect for humanity. Human-robot interaction is an academic field that now pays significant attention to ethical matters. The use of robots in health care for humans is currently at the level of concept studies. Current systems include robots that support human caregivers. It appears that the success of relies on this intentional sense of care, which foreseeable robots cannot provide.

It seems clear that AI and robotics will lead to significant gains in productivity and thus overall wealth. However, productivity gains through automation typically mean that fewer humans are required for the same output. It may thus mean a more radical change on the labor market than in the past. What currently seems to happen in the labor market as a result of AI and robotics automation is "job polarization" or the "dumbbell" shape. Perhaps enormous productivity gains will allow the "age of leisure" to be realized, something (Keynes 1930) had predicted. John Rawls argued that the free market would lead to a heavily unjust distribution of wealth. He argued that if we leave wealth to free market forces, the result would be an unjust distribution. And this is indeed a development that we can already see in the current AI economy.

Autonomy is the concept of whether a system is autonomous with respect to human control to a certain degree. In most jurisdictions, there is a sophisticated system of civil and criminal liability to resolve such issues. Technical standards for the safe use of machinery in medical environments will likely need to be adjusted. They are not supposed to describe actual ethical problems or to be solved with a

choice. They are thought experiments where choice is artificially constrained to a finite number of one-off options. This type of problem has reminded many of the problems encountered in actual driving and in autonomous driving. The notion of automated weapons is old. The main arguments against (lethal) autonomous weapon systems are that they support extrajudicial killings, take responsibility away from humans, and make wars more likely. German and EU laws on licensing automated driving are more restrictive than US counterparts. It appears that lowering the hurdle to use such systems (autonomous vehicles, missiles, or drones loaded with explosives) would increase the probability of their use. On the matter of accountability, autonomous weapons might make identification and prosecution of responsible agents more difficult.

Machine ethics is concerned with ensuring that machines' interactions with humans, and maybe other machines, are morally acceptable. Some authors make the extremely significant premise that robots can be ethical agents who are responsible for their acts in some way (see van Wynberg and Robbins 2019). The idea that machine ethics might take the form of "laws" has been investigated by Isaac Asimov. It is not clear that there is a consistent notion of since weaker versions are in danger of reducing "having an ethics" to notions that would not normally be considered sufficient. Thinking about superintelligence in the long term raises the question whether superintelligence may lead to the extinction of the human species. . These challenges are sometimes seen as being about human extinction (Bostrom 2013), or as being about any major threat to the species. The " refers to how we humans can maintain control of a super-intelligent AI machine. Self-improvement methods like Alpha Zero have drawn attention to self-intelligence. The singularity begs the question of how much of this "AI philosophy and ethics" is about AI. We'll have to keep a careful eye on developments to spot new challenges early on.

(798 words)

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3. Internet of things and its cyber security implications- report writing

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3. Internet of things and its cyber security implications- report writing

The Internet of Things, or IoT, refers to the billions of physical devices connected to the internet and collecting and exchanging data around the world. It's now feasible to turn everything, from a pill to a jet, into a part of the Internet of Things, thanks to the advent of super-cheap computer chips and the widespread availability of wireless networks. Connecting all these diverse products and attaching sensors to them gives devices that would otherwise be dumb a level of digital intelligence, allowing them to convey real-time data without involving a person. The Internet of Things is combining the digital and physical worlds to make the world around us smarter and more responsive.

People can use the internet of things to live and work smarter and achieve complete control over their lives. IoT is critical to business in addition to providing smart gadgets to automate homes. IoT gives businesses a real-time view of how their systems work, providing information on anything from machine performance to supply chain and logistical operations. Companies may use the Internet of Things to automate processes and save money on manpower. It also reduces waste and enhances service delivery by lowering the cost of manufacturing and delivering items and providing transparency into consumer transactions. As a result, the Internet of Things (IoT) is one of the most significant technologies in everyday life, and it will continue to gain traction as more organizations understand its potential.

One of the most serious challenges with the IoT is security. In many cases, these sensors are gathering incredibly sensitive data, such as what you say and do in your own house. Keeping that data secure is critical for consumer confidence, but the IoT's security track record has been dismal thus far. Too many IoT devices don't think about security basics like encrypting data in transit and at rest. Software flaws are discovered on a regular basis, even in old and well-used programs, yet many IoT devices lack the ability to be patched, leaving them permanently vulnerable. Because of their inherent lack of security, hackers are now aggressively targeting IoT devices such as routers and cameras, which are easy to corrupt and roll up into massive botnets. Smart household gadgets such as refrigerators, ovens, and dishwashers are vulnerable to hackers due to flaws. Researchers discovered 100,000 cameras that could be easily hacked, as well as security flaws in some internet-connected smartwatches for kids that allow hackers to track the wearer's whereabouts, listen in on conversations, and even contact with the user.

Governments are becoming increasingly concerned about the dangers. The UK government has issued its own security standards for consumer IoT devices. It anticipates that devices will have unique passwords, that corporations will provide a public point of contact where anybody can report a vulnerability (and that those reports will be investigated), and that manufacturers will declare precisely how long devices will receive security upgrades. It's a small list, but it's a start. When the cost of producing smart objects falls below a certain threshold, these issues will only grow more ubiquitous and difficult to solve. All of this is true in business, but the stakes are much larger.

Enterprises must ensure that industrial IoT networks are segregated and protected. Lack of uniform IoT security strategy makes this more difficult to achieve. Hackers are eager to meddle with industrial systems that have been connected to the internet but left unprotected, this is extremely concerning. The current state of IoT technology is very concerning.

Google, for example, has put artificial intelligence in charge of its data center cooling system. The AI analyzes data from thousands of IoT devices and feeds it into deep neural networks, which forecast how different decisions will affect future energy use. Google has been able to make its data centers more efficient by employing machine learning and AI, and the company claims that the same technology may be used in other industrial settings. As the cost of sensors and communications falls, it becomes more cost-effective to add more devices to the IoT – even if there is little visible advantage to customers in some circumstances. Most firms that are experimenting with the Internet of Things are still in the trial stage because the requisite technology – sensor technology, 5G, and machine-learning powered analytics – is still in its early stages of development.

There are numerous competing platforms and standards, and a variety of vendors, ranging from device manufacturers to software companies to network operators, are all vying for a piece of the pie. It's still unclear which of these options will prevail. However, in the absence of norms and with security remaining a concern, we are likely to see some more big IoT security mishaps in the next few years.

(799 words)

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