

5 Professionalism

5.1 Areas of Responsibility

Area of Responsibility	Definition	NSPE Canon	IEEE Code of Ethics for SE
Work Competence	Perform work of high quality, integrity, timeliness, and professional competence.	Perform services only in areas of their competence; Avoid deceptive acts.	Profession. Software engineers shall advance the integrity and reputation of the profession consistent with the public interest.
Financial Responsibility	Deliver products and services of realizable value and at reasonable costs.	Act for each employer or client as faithful agents or trustees.	Product. Software engineers shall ensure that their products and related modifications meet the highest professional standards possible.
Communication Honesty	Report work truthfully, without deception, and understandable to stakeholders.	Issue public statements only in an objective and truthful manner; Avoid deceptive acts.	Colleagues. Software engineers shall advance the integrity and reputation of the profession consistent with the public interest. Judgment. Software engineers shall maintain integrity and independence in their professional judgment.
Health, Safety, Well-Being	Minimize risks to the safety, health, and well-being of stakeholders.	Hold paramount the safety, health, and welfare of the public.	Management. Software engineering managers and leaders shall subscribe to and promote an ethical approach to the

			management of software development and maintenance. Self. Software engineers shall participate in lifelong learning regarding the practice of their profession and shall promote an ethical approach to the practice of the profession.
Property Ownership	Respect property, ideas, and information of clients and others.	Act for each employer or client as faithful agents or trustees.	Client and employer. Software engineers shall act in a manner that is in the best interests of their client and employer, consistent with the public interest.
Sustainability	Protect the environment and natural resources locally and globally.		
Social Responsibility	Produce products and services that benefit society and communities.	Conduct themselves honorably, responsibly, ethically, and lawfully so as to enhance the honor, reputation, and usefulness of the profession.	Public. Software Engineers shall act consistently with the public interest.

1. Work Competence

While there is a lot of overlap on which SE principles cover each area of responsibility, the principle of Profession is most similar to Work Competence. The principle of the profession for software engineers includes work integrity, obeying all laws governing their work, and being honest about the work they are doing. They should take responsibility for any problems caused by their work, and do everything they can to correct their errors. The NSPE codes are similar in that it is expected engineers will not take on work outside their expertise. NSPE also mentions that engineers should not fake their credentials, or do anything to falsely claim their skills.

2. Financial Responsibility

The principle of Product covers financial responsibility. This code of conduct covers the expected deliverables of a software engineer, including the expectation of reasonable cost. Some items covered are ensuring that the client and employee are on the same page when it comes to what work is expected of them and what repayment the employee will receive for their work. There is a realistic expectation of the work that can be done and the cost of that work. The engineer is responsible for meeting those expectations. This is different from NSPE because NSPE only mentions the employee being faithful to their employer. It does not mention the expectation that engineers should be paid fairly for their work.

3. Communication Honesty

There are two SE codes that fit this area, Colleagues and Judgement. Colleagues cover the fact that engineers are expected to be honest about what is their work and what is their colleague's work, listen to their colleague's concerns about the work, and not interfere with their colleague's work. Judgment covers the expectations that engineers will be objective when evaluating software, and tell everyone it concerns when conflicts of interest arise. The NSPE differs in that it requires communicating openly and honestly with the public about the work that is done, as well as being honest about their abilities as an engineer.

4. Health, Safety, Well-Being

There are two SE codes that cover this topic. The principle of Management expects that engineers have enough knowledge about their project so they can properly protect the sensitive information of the client. It expects engineers to behave ethically in all situations. The principle of Self also covers Health, Safety, and Well-Being. First, an engineer is expected to continuously learn how to create better protective systems in software. They are also expected to treat everyone fairly and without prejudice. The NSPE neglects the topics covered in Self but does include the expectations of Management. It expects engineers to always keep sensitive data confidential, as well as never engage in any activity that could put private information at risk, and never take any unlawful action.

5. Property Ownership

The SE code of Client and Employer best covers Property Ownership. It is expected engineers use the property of the client only in authorized ways, including only accessing the data they need to do their jobs, and always with the consent of the client. Keep open communication with the client about any concerns with their deliverables, since the entire project would be considered property of the client. The engineer should also not disclose any confidential information about the client's properties. The NSPE codes also cover these topics. Engineers are expected to only use the property of the client that they are allowed to use for their work.

6. Sustainability

Neither the SE principals nor the NSPE codes have a specific principle covering sustainability. There are parts of some SE principles that relate to the environment, including the Public principle that engineers should not knowingly use and software or equipment that significantly harms the environment, and should inform the client about potential dangers to the environment.

7. Social Responsibility

The SE principle dealing with Social Responsibility is the principle of Public. Engineers are responsible for only doing work that will benefit the client or the public. They should not approve of any software that does not meet ethical standards and should notify their client or authorities of possibly dangerous software. They should also answer to concerns of the public with regards to their work, and consider all factors that affect who might use their software, and how it might be used. The NSPE codes cover these expectations and expect engineers to accept personal responsibility for their actions, and always act in an ethical manner that benefits the public.

5.2 Project Specific Professional Responsibility Areas

1. Work Competence

Work competence is needed for this project. Competence in Python, natural language processing, machine learning, and various NLP libraries, are all needed to implement the project successfully and to create meaningful results. Our team is performing high in work competence, we are creating working NLP models with different libraries. These models generate data on how NLP works with software documentation.

2. Financial Responsibility

Financial Responsibility does not apply to this project. Our team is not being paid or spending money to complete this project. Therefore, there is nothing we have to be financially responsible for.

3. Communication Honesty

Communication Honesty is important to this project. If we were to falsify the results of this project, it would hurt the interest of the client, and could also affect others who choose to research the same topic in the future.

4. Health, Safety, Well-Being

Health, safety, and well-being are relevant to this project. The health of the team and the client is always important, as a healthy team will create better results. The team is also responsible for hosting meetings online and working remotely.

5. Property Ownership

It is important that we responsibly handle the data/information given to us by the client. The client has trusted us with Python code and software documentation data that they developed with their research and it is important that we respect the data and only use it with the consent of the client.

6. Sustainability

This project is being worked on with sustainability in mind. Our team and client recognize that software documentation and tools used to analyze it and break it down are ever-changing. With that in mind, we develop this project in such a way that allows frequent and constant change and maintenance. Our team is performing at a high level when it comes to ensuring sustainability throughout the project.

7. Social Responsibility

There have been instances in the past where Artificial intelligence has been used maliciously. It is our responsibility to only use our software in the way the client wants it and ensure that none of the technologies we use can negatively impact the public.

5.3 Most Applicable Professional Responsibility Area

One area of professional responsibility that is important to our project would be work competence. For the scope of this project, it is vital that group members understand the workings of natural processing languages, and how to compare them in Python. If group members are not able to perform good work competence, our end goal of selecting a word embedding to improve on would not happen. Throughout the semester, we have all shown good work competence, by understanding the differences between word embeddings, and working with the various NLP libraries. By following this professional responsibility area, we have been able to craft valid results that will prove beneficial to the overall goal of the project. All members will continue to strive to perform valid work competence, so we can provide satisfactory results to our clients.