Professionalism

Senior Design I

Project Title	Interactive evaluation of shortest path methods
Client & Advisor	Goce Trajcevski, Mengxuan Zhang
Team	sddec23-14
Team Members	Alex Blomquist, Samuel Caldwell, Selma Saric, Yadiel Johnson

This discussion is with respect to the paper titled: "Contextualizing Professionalism in Capstone Projects Using the IDEALS Professional Responsibility Assessment", International Journal of Engineering Education Vol. 28, No. 2, pp. 416–424, 2012.

1 Areas of Responsibility

Area of Responsibility	ACM S E Code of Ethics	In Our Own Words…
Work Competence	**Product:** Software engineers shall ensure that their products and related modifications meet the highest professional standards possible. **Profession:** Software engineers shall advance the integrity and reputation of the profession consistent with the public interest.	The S E code of ethics is clear regarding the engineers' qualifications. There, they state that an engineer should have their mind on delivering quality products in a way that improves the perception of "software engineering" and support the public's interest. While NSPE specifies that one should "avoid deceptive acts", the S E code of ethics suggests that we should work in favor of advancing the profession.
Financial Responsibility	**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. **Product**. Software engineers shall ensure that their products and related modifications meet the highest professional standards possible.	The S E code of ethics suggests that the engineer act in accordance with what benefits the employer and the public. It matches the NSPE definition reasonably well, but it makes no mention of financial responsibility. That said, supporting the employer can also include this capacity.
Communication Honesty	**Client and employer:** Software engineers shall act in a manner that is in the best interests of their client and employer,	The S E code of ethics is a bit different compared to the professionalism paper when it comes to working with colleagues. The S E code of ethics states that you must be fair and supportive to

	consistent with the public interest. **Colleagues:** Software engineers shall be fair to and supportive of their colleagues.	your team members while the professionalism paper has more of an emphasis on telling the truth and not being deceptive.
Health, Safety, Well-Being	**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.	The S E code of ethics states that engineers work to promote ethical approaches to practice in the profession and extends this to the reputation and interests of the public. The NSPE definition holds similarly by suggesting holding the health safety and welfare of the public above all
Property Ownership	**Management:** Software engineering managers and leaders shall subscribe to and promote an ethical approach to the management of software development and maintenance. **Colleagues:** Software engineers shall be fair to and supportive of their colleagues.	Engineers should honor all forms of intellectual property owned by the employer. They do not have the right to profit from independent sales or use of their intellectual property.
Sustainability	**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 **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.	The S E code of ethics does not have anything specific about the environment unlike the professionalism paper. Although the environment specifically is not mentioned, the code of ethics states that engineers must operate ethically and, in the public's, best interest.
Social Responsibility	**Public:** Software engineers shall act consistently with the public interest. **Profession:** Software engineers shall advance the integrity and reputation of the profession consistent with the public interest.	Engineers must prioritize society's benefit, while also upholding their company's and profession's reputation. The NSPE canon is more detailed than the ACM Code of Ethics in this regard, specifying that engineers should behave honorably, responsibly, ethically, and lawfully to improve the profession's reputation and usefulness.

2 Project-Specific Professional Responsibility Areas

For each of the professional responsibility area in Table 1, discuss whether it applies in your project's professional context. Why yes or why not? How well is your team performing (High, Medium, Low, N/A) in each of the seven areas of professional responsibility, again in the context of your project. Justify.

- **Work Competence –** This has a high priority in our project because we strive to deliver a high-quality product that is successful in visually displaying algorithms and picking the best algorithm for our user's data sets. We want to meet the highest professional standards possible so that our client and users are satisfied.
- **Financial Responsibility –** This has a low priority for us because this is a relatively low-cost project, so finances and budget are not much of a concern.
- **Communication Honesty –** This has a high priority for us because it enables us to collaborate and communicate better with our client and amongst ourselves. Good communication and collaboration between everyone within a team is essential to the team's success.
- **Health, Safety, Well-Being –** This has a medium priority because we currently have a small group of target users, but in a future where we expand, this can help the public at large. It is not high priority now at this moment, however.
- **Property Ownership –** This has a medium priority because implementations of algorithm visualizers already exist and are publicly available, but the way we implement our app algorithm visualizer will be ours. Our backend will use pre-existing algorithms, and our frontend will use pre-existing visualizer tools, but the way we implement it will ultimately be unique.
- **Sustainability –** This has a low priority because our app will not have a big impact on the environment and is not something that would be ethically questionable.
- **Social Responsibility –** This has a high priority because our users (and potentially the public) should benefit from our tool. Algorithm visualizers are important for things like electric vehicles that require algorithms for shortest path calculations and need a way to visualize the shortest path for the user.

3 Most Applicable Professional Responsibility Area

Identify one area of professional responsibility that is both important to your project, and for which your team has demonstrated a moderate or high level of proficiency in the context of your project. Briefly describe what this responsibility means to your project, the ways in which your team has demonstrated the responsibility in the project, and specific impacts to the project that you have observed.

Work Competence – This high-priority professional responsibility covers multiple categories of testing and software integration as well as team planning and communication. This can have many costly effects that could strain the overall project scope if planned or executed poorly. Presently, this creates a need to take precautions and plan the development of high-quality code, be it by preparing an extensive software tests suite to project planning and meeting coordination. To address these issues, our team has opted for two weekly meetings outside of our advisor meeting and peer reviewing our design documentation and code before submission. This has allowed us to keep a better eye on our quality control and expectations and even get ahead of the curve on some groundwork defining our project's requirements, such as the use-case diagram.