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5 Professionalism

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

5.1 AREAS OF RESPONSIBILITY

Pick one of IEEE, ACM, or SE code of ethics. Add a column to Table 1 from the paper corresponding to the society-specific code of ethics selected above. State how it addresses each of the areas of seven professional responsibilities in the table. Briefly describe each entry added to the table in your own words. How does the IEEE, ACM, or SE code of ethics differ from the NSPE version for each area?

AREA	IEEE CODE OF ETHICS
WORK COMPETENCE	1, 5, 6, 10
FINANCIAL RESPONSIBILITY	4, 9
COMMUNICATION HONESTY	3, 7, 8
HEALTH, SAFETY, WELL-BEING	1, 9
PROPERTY OWNERSHIP	4, 9
SUSTAINABILITY	5, 6
SOCIAL RESPONSBILITY	1, 2, 5, 8

IEEE code of ethics

1. TO ACCEPT RESPONSIBILITY IN MAKING DECISIONS CONSISTENT WITH THE SAFETY, HEALTH, AND WELFARE OF THE PUBLIC, AND TO DISCLOSE PROMPTLY FACTORS THAT MIGHT ENDANGER THE PUBLIC OR THE ENVIRONMENT;

2. TO AVOID REAL OR PERCEIVED CONFLICTS OF INTEREST WHENEVER POSSIBLE, AND TO DISCLOSE THEM TO AFFECTED PARTIES WHEN THEY DO EXIST;

3. TO BE HONEST AND REALISTIC IN STATING CLAIMS OR ESTIMATES BASED ON AVAILABLE DATA;

4. TO REJECT BRIBERY IN ALL ITS FORMS;

5. TO IMPROVE THE UNDERSTANDING OF TECHNOLOGY; ITS APPROPRIATE APPLICATION, AND POTENTIAL CONSEQUENCES;

6. TO MAINTAIN AND IMPROVE OUR TECHNICAL COMPETENCE AND TO UNDERTAKE TECHNOLOGICAL TASKS FOR OTHERS ONLY IF QUALIFIED BY TRAINING OR EXPERIENCE, OR AFTER FULL DISCLOSURE OF PERTINENT LIMITATIONS;

7. TO SEEK, ACCEPT, AND OFFER HONEST CRITICISM OF TECHNICAL WORK, TO ACKNOWLEDGE AND CORRECT ERRORS, AND TO CREDIT PROPERLY THE CONTRIBUTIONS OF OTHERS;

8. TO TREAT FAIRLY ALL PERSONS AND TO NOT ENGAGE IN ACTS OF DISCRIMINATION BASED ON RACE, RELIGION, GENDER, DISABILITY, AGE, NATIONAL ORIGIN, SEXUAL ORIENTATION, GENDER IDENTITY, OR GENDER EXPRESSION;

9. TO AVOID INJURING OTHERS, THEIR PROPERTY, REPUTATION, OR EMPLOYMENT BY FALSE OR MALICIOUS ACTION;

10. TO ASSIST COLLEAGUES AND CO-WORKERS IN THEIR PROFESSIONAL DEVELOPMENT AND TO SUPPORT THEM IN FOLLOWING THIS CODE OF ETHICS.

5.2 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.

AREA	APPLICATION TO THE PROJECT	HOW WE ARE DOING
WORK COMPETENCE	YES, INCOMPETENT WORK WOULD MAKE OUR SECURITY SYSTEM WORTHLESS.	HIGH, WE ARE THOROUGHLY EXAMINING OUR WORK AND REQUESTING THE ADVICE OF EXPERTS IN THE FIELD TO ENSURE OUR PROJECT IS HIGH-QUALITY.
FINANCIAL RESPONSIBILITY	YES, OPTIMIZING OUR PROJECT WILL REDUCE THE AMOUNT OF COMPUTING RESOURCES REQUIRED, WHICH WILL LOWER COSTS.	HIGH, WE ARE WEIGHING ALL OF OUR OPTIONS AND SEEING WHICH WAY IS THE BEST IN ORDER TO OPTIMIZE OUR PROJECT AND REDUCE OUR COSTS.
COMMUNICATION HONESTY	YES, IF OUR PROJECT MISLEADS OUR CLIENT ABOUT ITS EFFECTIVENESS, IT COULD JEOPARDIZE THE INTEGRITY OF THE POWER GRID AND NEGATIVELY AFFECT MANY LIVES.	HIGH, WE ARE IN CONSTANT COMMUNICATION WITH THE CLIENT TO UNDERSTAND IF WE ARE MEETING REQUIREMENTS.
HEALTH, SAFETY, WELL-BEING	NO, OUR PROJECT'S QUALITY DOES AFFECT WELL-BEING BUT THIS ASPECT IS ALREADY COVERED BY THE WORK COMPETENCE CATEGORY.	N/A
PROPERTY OWNERSHIP	YES, WE ARE WORKING WITH AN EXISTING SYSTEM DEVELOPED BY OTHERS. WE MUST RESPECT THEIR CONTRIBUTIONS.	HIGH, WE ARE IN COMMUNICATIONS WITH THE ORIGINAL OWNERS OF THE SYSTEM ON ANY ADDITIONS WE CREATE
SUSTAINABILITY	NO, OPTIMIZING OUR SYSTEM WILL REDUCE POWER USAGE, BUT THIS ASPECT IS ALREADY COVERED BY FINANCIAL RESPONSIBILITY	N/A
SOCIAL RESPONSIBILITY	YES, PROTECTING THE SOLAR POWER GRID FROM ATTACK	HIGH, OUR PROJECT PRIORITIZES A USEFUL

	BENEFITS SOCIETY BY PREVENTING POWER OUTAGES.	INTERFACE THAT PRESENTS INFORMATION IN A WAY SUITED FOR PREVENTING THREATS TO THE POWER GRID, WHICH WILL MAXIMIZE THE PROJECT'S BENEFITS TO SOCIETY.

5.3 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	SPLIT INTO 1,5,6,10 IEEE COMPETENCIES OUR GOAL IS TO DETECT AND ANALYZE VARIOUS ALERTS, WHICH ARE TRIGGERED BY CYBER ATTACKS AGAINST A POWER GRID. THEREFORE, WORK COMPETENCE IS VERY IMPORTANT TO THE PROJECT SINCE OUR ABILITY TO DETECT ATTACKS DEPENDS ON THE QUALITY OF THE IMPLEMENTATION OF THE DETECTION AND ANALYSIS SYSTEMS. (5,6) SO FAR, WE HAVE ENSURED QUALITY BY CONDUCTING A THOROUGH REVIEW OF THE ANOMALY DETECTION FIELD AND CONTINUOUSLY REVIEWING AND REFINING OUR WORK WITH THE HELP OF OUR CLIENT, WHO IS AN EXPERT IN THE FIELD OF ANOMALY DETECTION. (1,10)BY TAKING THIS APPROACH, WE HAVE BEEN ABLE TO GAIN A COMPLETE UNDERSTANDING OF RELEVANT CONCEPTS FOR OUR PROJECT, AND THAT KNOWLEDGE HAS CAUSED OUR DECISIONS TO BE MADE WITH CONFIDENCE. (5,6,10)WE HAVE NOT REACHED THE POINT OF OBTAINING DATA TO REPRESENT OUR PROJECT'S QUALITY, BUT WE ARE TAKING STEPS TO PROACTIVELY INCREASE ITS EFFECTIVENESS AT ALL STAGES OF DEVELOPMENT.