Reflection:

Computing Ethics, RMPP Elements

Although computing ethics are excluded from the Research Methods and Professional Practice (RMPP) stated aims; the initial reflective activity on computing ethics, plus two collaborative learning discussions on ethical codes and ethical research activities confirm this is an important area of study. Unfortunately, or perhaps by clever curriculum design, the student is faced with an ethical dilemma of their own. Two of the module's three summative assignments required a great deal of time while the assignments on ethics are formative. For a working cyber security professional, the dilemma of allocating precious evening and weekend time is exacerbated by findings within the research material itself. A statement such as "*The criticism that research on ethics and computing lacks impact is not novel. Our research has demonstrated that there are good reasons to believe this to be a valid criticism*" (Stahl et al., 2016), followed by multiple examples of essentially uncontested unethical behaviour (Abbott, 2005; Alchuna, 2015) explored in the discussions; a student could reasonably conclude computing ethics are unimportant.

Potential futility acknowledged, the ethical issues mentioned in the research paper were considered and privacy selected. Although the Stahl et al (2016) survey found privacy the most research ethical matter (Fig 1), and violations of this basic human right continue at the hands of cyber-criminals, corporations, or governments (Niazi et al., 2022); my ethical motivation as a company stakeholder is utilitarian (McCartney & Parent, 2015). Although governments and cyber-criminals may be able to escape consequences, large international companies have been experiencing the financial impacts of GDPR violations (Tessian, 2022), often privacy related. Therefore, as a company stakeholder responsible for cyber security (ACM, 2018), I would feel bound to guard employee, customer, and supplier information privacy.

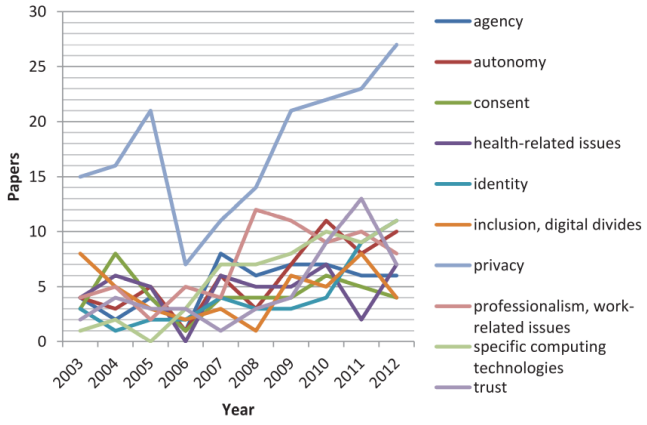

Figure 1 Top 10 ethical issues observed in research survey (Stahl et al., 2016)

Students were asked to participate in the formative discussions within specific timeframes, sadly, a review of both discussion boards (Essex, 2022a; Essex, 2022b) will confirm more than 50% failed to do so. While those keeping the formative assignment commitments may choose to feel a degree of resentment, this bigger impact is the potential loss of perspective from those not participating or "contributing" well past the assignment timelines applicable for collaborative engagement.

Despite time pressures and minority participation, researching computing ethics prompted reflection of my personal compliance to ethical codes of conduct despite the lack of consequences (Abbott, 2005), resulting in a public blog post (Leece, 2022) on my podcast website. I believe this is evidence that aspects of the Essex education are being reflected in my professional activities.

The ePortfolio reading assignments and tutor discussions on same do promote a net positive perspective for all, yet outcomes primarily benefit students transitioning into a new career and academic institutions demonstrating something beyond GPA and graduation statistics (Eynon et al., 2014). I have questioned ePortfolio value for those with established careers since I began the program so in the spirit of academic research, I performed a small experiment on the regularly repeated "What, so what, now what" model to assess potential value to an established professional.

The literature review assignment was an extremely frustrating activity, challenging me to dig deeply into the related research and presented significant time management pressures. The process was unpleasant, but this literature review resulted in one of only two new, cybersecurity related learning occurrences I experienced during the program. Consequently, after receiving positive tutor feedback, I was proud of the outcome and wanted to share this research on crime detection using artificial intelligence with my industry peers. I sent personal messages and the 2000-word review to ten cyber security industry peers who expressed an interest, to date, one has responded with their thoughts. While that peer's feedback was positive, indicating other industry professionals may find value in the work I did, it pales to the regular feedback and discussion my risk management podcast (McCreight & Leece, 2022) generates.

Since academic research and many commercial initiatives often rely on statistics, dedicating two RMPP units toward statistics intuitively makes sense. Hands-on completion of the provided exercises using Excel was quite interesting, unfortunately, completing step-by-step exercises does not assure conceptual understanding (Domin, 2007). Personally, after completing the required readings and exercises, I cannot explain concepts like two tail analysis and significance. Fortunately, summative assessment is limited to assignment completion, not correctness, effectively a participation ribbon rather than skill development. That said, a thoughtful student would now have limitation awareness and for personal action steps, I will seek advice from someone more skilled in statistical analysis should such data be relevant to something I am working on.

Like the ePortfolio, the BCS based professional skills matrix appears to assess readiness for those new in career or transition. Included in my ePortfolio for completeness, I can provide evidence of proficiency or expertise in all matrix areas applicable to my chosen career path. That said, although completing the skills matrix requires evidence of skills claimed, alignment with skill level criteria is self-assessed and therefore subject to bias (Pronin et al., 2004). I am reasonably confident with proficiency claims due to consistent achievement of distinction level grades on summative assessments as well as peer and

employment feedback over an uninterrupted twenty-five-year ICT employment history. The SFIA global skills ad competency framework was also reviewed in the areas of *Strategy and Architecture* as well as *Delivery and operations* (SFIA, n.d. a). Within the area of cyber security my professional roles over the previous decade have had multiple aspects of SIFA level 6, "*Initiate, Influence*" responsibilities (SFIA, n.d.b), summarized in table 1.

Strengths	***Weaknesses***
Currently performing level 6 work as defined by SIFA for both D&O security services and S&A Information security Currently provide input into level 7 functions on a regular basis and manage a small team implementing new capabilities across the organization Active security community involvement and decades of industry experience provide a wide network of information contacts and good personal brand reputation. Both help influence objectives.	Dividing focus between two different but related areas will potentially delay delivery of certain outcomes Large scale cybersecurity programs are long running, costly and difficult to show quick return on investment "Cyber security is a board level risk" is somewhat fear based, driving focus on prevention measures and compliance, (which are never ending), rather than promoting the larger organizational resilience concept, of which cyber security is one element
Opportunities	***Threats***
There are very few career opportunities within my current employer, further advancement would be entirely dependent on retirement of senior leadership, and I do not represent a demographic board-mandated for leadership development.	The organization's advocated preference for leadership and influence without title limits the ability to enforce recommendations directly. This can result in both delayed implementation and watered-down solutions in the name of compromise. Organizational inertia tends to remove prioritization for cyber security and resilience efforts

Table 1 SIFA & BCS skills matrix SWOT

The RMPP research proposal assignment was completed with the MSc Cyber Security capstone in mind and received positive tutor feedback. Although technical challenges are anticipated, I expect the main areas of development I will need to work on are the survey and interview aspects of the project. Fortunately, both were units within the RMPP program with both lectures and suggested reading to support.

Commented [DL4]: ePortfolio link

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