Final Reflection

https://michaelsammueller.github.io/eportfolio/

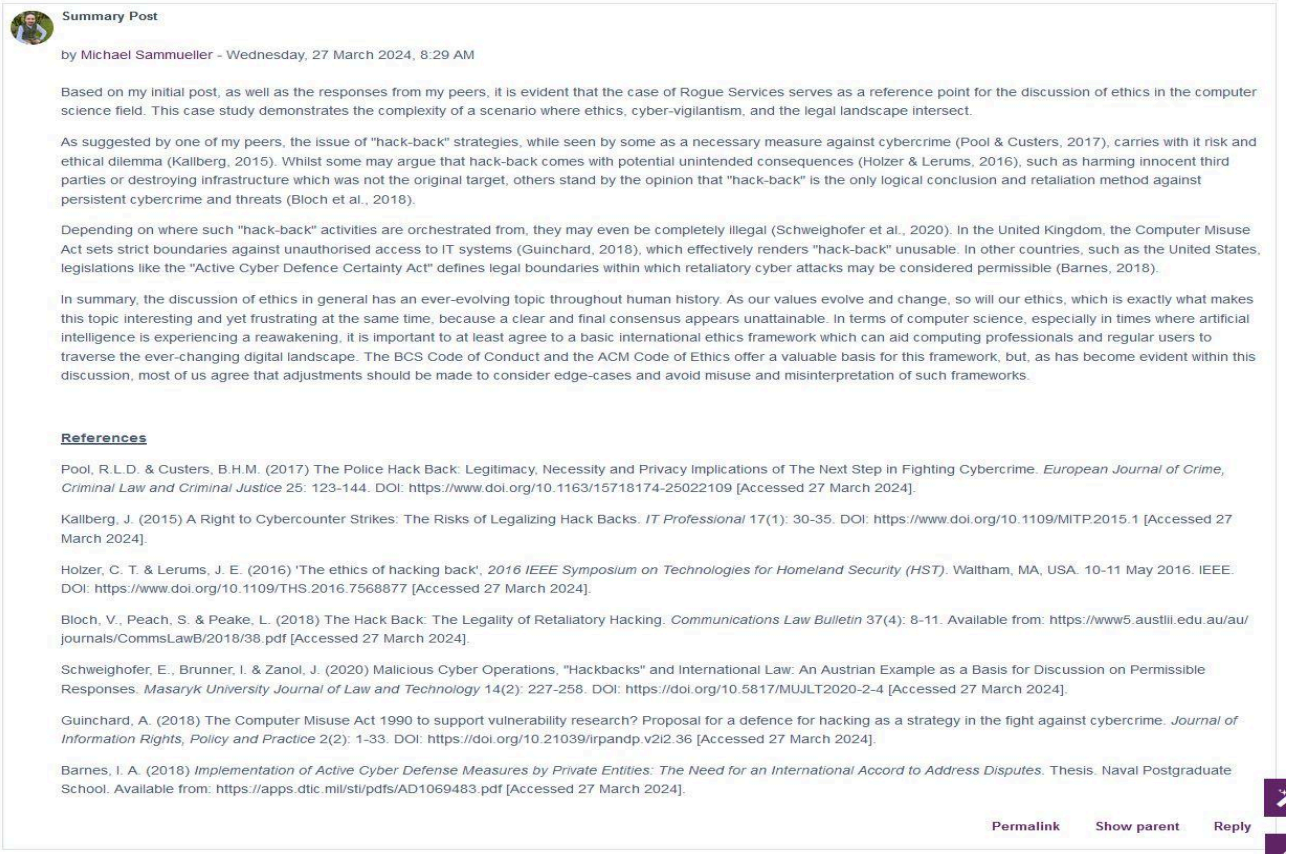
Word Count: 1,059

Introduction

Studying the module “Research Methods and Professional Practice” provided a welcome reminder of research designs, methods, and methodology, as well as a great preparation for the final step in the Master’s journey – the thesis. Although I greatly missed programming throughout the module, I enjoyed the change and focus on literature reviews and presentations. During this module, I was able to formulate a plan for my thesis, as well as come up with a timeline and a proposal, which, after all, was not as complicated as it seemed.

Module Reflection

The first ten units covered various relevant topics ranging from research methods, to design, querying methods such as surveys and questionnaires, and guided us towards the literature review, our first assignment. As always, I particularly enjoyed the discussion forums, which challenged us to reflect on ethical discussions and our peer’s opinions. Because an online study program comes with limited interaction with fellow students, the discussion forums are always a welcome way of interacting with others.



Summary Post

by Michael Sammueller - Wednesday, 27 March 2024, 8:29 AM

Based on my initial post, as well as the responses from my peers, it is evident that the case of Rogue Services serves as a reference point for the discussion of ethics in the computer science field. This case study demonstrates the complexity of a scenario where ethics, cyber-vigilantism, and the legal landscape intersect.

As suggested by one of my peers, the issue of "hack-back" strategies, while seen by some as a necessary measure against cybercrime (Pool & Custers, 2017), carries with it risk and ethical dilemma (Kallberg, 2015). Whilst some may argue that hack-back comes with potential unintended consequences (Holzer & Lerums, 2016), such as harming innocent third parties or destroying infrastructure which was not the original target, others stand by the opinion that "hack-back" is the only logical conclusion and retaliation method against persistent cybercrime and threats (Bloch et al., 2018).

Depending on where such "hack-back" activities are orchestrated from, they may even be completely illegal (Schweighofer et al., 2020). In the United Kingdom, the Computer Misuse Act sets strict boundaries against unauthorised access to IT systems (Guinchard, 2018), which effectively renders "hack-back" unusable. In other countries, such as the United States, legislations like the "Active Cyber Defence Certainty Act" defines legal boundaries within which retaliatory cyber attacks may be considered permissible (Barnes, 2018).

In summary, the discussion of ethics in general has an ever-evolving topic throughout human history. As our values evolve and change, so will our ethics, which is exactly what makes this topic interesting and yet frustrating at the same time, because a clear and final consensus appears unattainable. In terms of computer science, especially in times where artificial intelligence is experiencing a reawakening, it is important to at least agree to a basic international ethics framework which can aid computing professionals and regular users to traverse the ever-changing digital landscape. The BCS Code of Conduct and the ACM Code of Ethics offer a valuable basis for this framework, but, as has become evident within this discussion, most of us agree that adjustments should be made to consider edge-cases and avoid misuse and misinterpretation of such frameworks.

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The last two units rounded off the module nicely by providing various literature on e-portfolios and creative writing. This left just enough time to polish my portfolio and write a final reflection. I enjoyed reading the papers on e-portfolios, especially the papers by Weber (2018), Hoven et al. (2022), Miller & Morgaine (2009), and Händel et al. (2018), which I reflected upon in my portfolio. I thought they all made valuable points on the pros and cons of e-portfolios. I especially agree with Weber (2018), where she talks about a gap between a student's skills and the needs of an employer, which I have pointed out in the artefacts of Unit 11 in my portfolio.

Throughout my studies at the University of Essex, I have come to appreciate the strategy of working ahead, which meant that I had already created the sections for each unit, added the artefacts I wanted to share, and wrote a reflection whenever I moved onto the next unit. This allowed me to pull aspects from each unit into this final reflection, which I intend to not only reflect this module but be a brief reflection on my studies overall, since this is indeed the final reflection.

Reflection on Assignments

For the first assignment, I chose to write about state-sponsored cyberterrorism, as cybersecurity is one of my favourite branches of computer science. I decided to follow a new strategy which would allow me to increase efficiency and the quality of my submission. Before starting, I conducted a literature search, where I scanned various online sources such as Google Scholar and the university's eLibrary, and collected sources which I thought would add value to my submission. I created a list of said sources, which included points and claims each author made, as well as the correct reference for each article or paper.

When moving on to the actual review, I was then able to create a structure, write the review and add the citations I had already prepared, saving me many hours of research time. Prior to this, I often found myself formulating and writing my submission whilst doing the literature search, which resulted in frequent rewrites and changes in my submissions.

For the second assignment, we were given the choice of creating a research proposal presentation on the topic of our literature review, or the topic of our capstone project. I chose the latter, as I had already thought about it a lot and had a basic proposal structure already written. Although I started working on this presentation with a lot of research already done, I did find that putting it to paper in a structured manner really provided a valuable overview of the project. Specifically creating elements such as the Gantt chart for the project timeline put the entire project into perspective, making something that seemed quite overwhelming doable.

Throughout the module, I experienced a range of emotions, from excitement to stress, uncertainty, and satisfaction. Excitement, because I enjoy writing essays and was looking forward to delving into the topic of cyberterrorism, learning the ins and outs of current academic opinion and contradicting opinions, and forming my own opinion on the topic. Stress, because I always strive to complete my assignments on time and to the highest standard, and I tend to put a lot of pressure on myself, for which I am usually rewarded. Uncertainty, because I sometimes tend to second guess myself, which leads to me being uncertain whether or not I did the best I actually could. Although some researchers argue that this is caused by the structure and instructions of an assignment (Variawa, 2019), I believe it comes from the desire not to rely on

confidence and speculation but on clear facts. Furthermore, it originates from the task to answer the questions of whether one has fulfilled the assignment requirements, and also one's own requirements. Satisfaction, because I achieved what I set out to achieve, and my grade/grades reflected it.

Action Plan

Based on the SWOT analysis I conducted during Unit 11, I have concluded that there are four main issues which I would like to focus on for the future. Firstly, I will pursue new opportunities whenever they are offered to me, which is something I have already started to do within my professional environment, for instance when I created a program that can start, stop, and restart software on roughly two hundred PCs via the network. Secondly, I will continue to remain aware of current developments in artificial intelligence, both as an end-user and a developer in order to stay ahead of the curve. Thirdly, I will stop worrying about things which are outside of my control, which has been in progress over the past year. Lastly, I will be confident in my experience, skill, and performance as a student and a computing professional.

SWOT ANALYSIS

University of Essex

	Helpful to achieving the objective	Hamper achieving the objective
Internal origin (attributes of the system)	Strengths 1. Dealing with people from various cultural and religious backgrounds 2. Python programming 3. Being aware of current advances in technology 4. Identifying gaps in current research	Weaknesses/Areas for further development 1. Create and discuss strategies for sustainability 2. Java 3. Active participation in range of community activities
External origin (attributes of the environment)	Opportunities 1. Working on a web application for my employer 2. Creating internal management tools 3. New job opportunities	Threats 1. Artificial intelligence 2. Overthinking 3. Double-guessing

ACTION PLAN

- Pursue new opportunities
- Remain aware of current developments in artificial intelligence, both as an end-user and a developer to stay "ahead of the curve"
- Not worry about things which are outside of my control
- Be confident in my experience, work, and performance

Conclusions

I felt confident throughout the module, mixed with a little bit of excitement because it is indeed the final module of my studies, after which I will move on to writing my thesis. It feels almost bittersweet to have reached this point, considering the amount of knowledge I gained throughout the past one and a half years, the wonderful fellow students and tutors I met along the way. Regardless, this motivates me to do the utmost best for my thesis.

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