

Introduction

This interdisciplinary reflection paper examines the combination of three essential marketable skills in Research and Inquiry, Adaptability, and Computer Literacy which were developed through my academic background in the courses I have taken such as IDS300w and non school experiences like my hands-on work as a Cyber Security Intern at the Earth Viability Center (EVC). Using artifacts that I have gotten from ethical principles I learned in my cyber ethics classes, community leadership experience from my humanitarian club I am proudly part of, and hands-on security assessments I will demonstrate how these combined knowledge areas have prepared me for a career where I will be working with technology to improve cyber space safety. Particularly in Cyber Security, this field has moved beyond being entirely technical. The cybersecurity profession exists in the overlap of technology and human behaviour which does warrant ethical standards (Carley, K. M. 2020) and basic knowledge. My major has allowed me to combine both the analytical part of economic research with the ethical frameworks of philosophy and the practical needs of "social cyber security". An interdisciplinary method of education is critical when tackling human factor vulnerabilities that exist when talking about cyber security which cannot be resolved through technical code alone. Because of this throughout my academic program as well as during my time interning on the Place4us platform, I have moved from being a student of theory to becoming someone with the capability to navigate highly complex social and technical situations.

Skill #1 : Research & Questioning

Conducting thorough research and asking probing questions are core elements of who I am as an individual as well as part of interdisciplinary thinking. For instance, with my artifact about

Occupational Sex Discrimination (OSD) I utilized a variety of disciplines like sociology, economics, psychology and law to understand OSD as a systemic problem.(Blau 2017) My research indicated that although the difference between men and women with education gaps and experience and all had grown smaller, there were still large gender based differences in the occupations where each gender worked which remains one of the two major contributing factors to the wage gap. I was able to independently solve this research problem by questioning cultural norms that reward masculine traits above feminine ones or that penalize women who use traits associated with masculinity like negotiating for example(Clance 1978).

As a direct application of the skill of research, I was lucky enough to have had the opportunity for an internship with the EVC where I conducted a cybersecurity assessment on a new posting service, Mycelia. In order to identify actual vulnerabilities in its planned architecture and design I used more than a standard approach and instead I researched established best practices that yielded several mitigation strategies for injection and XSS vulnerabilities. This experience further demonstrates my ability to apply academic research methodologies to secure high visibility features in a live digital environment.

Skill #2: Ability to Adjust

Being able to adjust involves switching between different ways of thinking as well as strategies for solving problems within a variety of environments. An example of my adjustment skills can be found in my artifact of "Cooking Night picture" which with my role of Special Event Coordinator for this multicultural event that my club was hosting. In coordinating the logistics for this event, I had to work with multiple different cuisines and students with different needs and food restrictions, which showed my strength in leading within a non-technical environment.

In my technical work however, adjusting was a necessity from a mechanical perspective. The Place4us platform from my internship is built on Linux and is written in the PHP programming language, none of which I had any prior familiarity with. To be successful in meeting my internship objectives, I adapted to learn enough PHP syntax through the use of online youtube tutorials to be able to think about the logic of the code and identify possible security risks with the code written to develop the features of the system. I transitioned from technical analysis to graphic design of the graphic assets used to help illustrate the mission of the platform regarding planetary stewardship through the use of the Canva graphic design program included in our ODU access. The fact that I was able to transition from using a command line terminal to utilizing a visual design program to develop the same messaging shows the importance of developing adaptability as cybersecurity professionals in a rapidly evolving field.

Skill #3 Computer Literacy

In 2026 Computer Literacy will include knowledge of how people interact with technological systems in what will ultimately become more and more part of daily life on digital playgrounds. My area of study is on Social Cybersecurity, which looks at how the digitally mediated world is going to change how we as humans will behave. I applied computer literacy to my artifact associated with the Tea App Data Breach when I analyzed the risk of using generative Artificial Intelligence to develop code via informal methods without the code going through security checks which is also known as vibe coding.

While during my internship, I also exhibited an advanced level of computer literacy by performing research related to using ClamWIN Anti-virus an open-source anti-virus software to

correct a known vulnerability with one of the web pages on the site I was partly in charge of the security for. I completed this by conducting research around the best methods of scanning proprietary file formats that were ignored by the current operating system. I also researched advanced cryptographic principles such as Shamir's Secret Sharing to develop effective methods for securing a number of encryption keys which helped bring a solution my supervisor had been looking for for a while.

Accountability, adherence to moral principles and values, and effective teamwork showcase my professionalism. I presented an example of my personal professional standard in my artifact paper on Kantian Ethics, which states that system developers have a "Categorical Imperative" to honor user autonomy by considering security as a moral absolute.

My project with other interns involved creating a five-phase distributed verification process that would allow users to moderate community-based content. Developing this system required balancing safety for the reader with fair treatment of those posting content. In support of showcasing my professionalism, I participated with my team in recapping our project through the creation of a resource paper intended for future interns that described both the issues we encountered and the solutions implemented by our project. This resource will allow us to continue to work collaboratively as an organization, as well as demonstrate our level of professionalism.

Synthesis of Academic and Real World Experiences

The ODU curriculum has definitely offered me the vocabulary and conceptual framework I required to become a professional. My course in network security provided me with the foundation to initiate my research into Transport Layer Security and what cipher suites to use while I was assigned to intern as a Systems Administrator. The internship took me outside the

classroom by forcing me to deal with uncomfortable time management situations and the learning curve that comes with professional work partnerships and deadlines and deliverables that you promise to your supervisor . From my exploration into the above issues I have come to learn that someone who can think broadly needs to understand how companies and experts share the risks of creating products or services. The technical data I collected throughout my time at ODU has been invaluable.

Conclusion

What comes from my degree program is a collection of technical skills and a way to approach problems. Essentially this means that I will approach problems from a holistic perspective from now on all thanks to the ODU curriculum and those that have educated me. Ethical reasoning will be viewed as both an integral part of my profession and as an academic exercise. I will ask myself who benefits from a system, and who does not. These habits of thought are the foundation of interdisciplinary studies and the habits I need in order to hopefully one day be successful as a cybersecurity and business manager. In addition, the interdisciplinary research methods I learned through IDS 300W provided me with the framework to bring together knowledge from different disciplines while maintaining the high level of precision that each subject area requires. The ethics classes I have taken in college gave me a structured basis for ethical reasoning, which I have applied in real-time to situations rather than only in papers. Finally, through the technical classes, I have received an essential technical foundation for working in the field of cybersecurity and had the chance to work in a real-world environment where my actions have real life consequences that affect my peers. I've been fortunate enough to say I have developed the ability to think in an interdisciplinary manner.

References:

Blau, F. D., & Kahn, L. M. (2017). The Gender Wage Gap: Extent, Trends, and Explanations. *Journal of Economic Literature*, 55(3), 789–865.
<https://pubs.aeaweb.org/doi/pdfplus/10.1257/jel.20160995>

Carley, K. M. (2020). Social cybersecurity: an emerging science. *Computational and Mathematical Organization Theory*, 26(4), 365–381.
<https://doi.org/10.1007/s10588-020-09322-9>

Clance, P. R., & Imes, S. A. (1978). The Imposter Phenomenon in High Achieving women: Dynamics and Therapeutic intervention. *Psychotherapy: Theory, Research & Practice*, 15(3), 241–247. <https://doi.org/10.1037/h0086006>

Dunn Cavelty, M., & Wenger, A. (2020). Cyber security meets security politics: Complex technology, fragmented politics, and networked science. *Contemporary Security Policy*, 41(1), 5–32. <https://doi.org/10.1080/13523260.2019.1678855>

Cremer, F., Sheehan, B., Fortmann, M. et al. Cyber risk and cybersecurity: a systematic review of data availability. *Geneva Pap Risk Insur Issues Pract* 47, 698–736 (2022).
<https://doi.org/10.1057/s41288-022-00266-6>

Silberling, A. (2025, June 12). The Meta AI app is a privacy disaster | TechCrunch. TechCrunch.
<https://techcrunch.com/2025/06/12/the-meta-ai-app-is-a-privacy-disaster>