

The Importance of a Postgraduate Degree in the Cyber Security Field

Induction Assignment by Thomas Smith

Introduction

Advanced cyber threats have made the need for highly skilled individuals clearer than ever. With ransom attacks and substantial data breach fines to consider, companies across all industries must invest in protection of their digital assets. However, the front line of defence against cyber criminals is seemingly sparse with 59% of cybersecurity teams across the globe claiming to be understaffed (ISACA, 2023) and 3.5 million unfilled cyber security jobs in both 2022 and 2023 (Morgan, 2023). Across all industries, the use of technology solutions and digital infrastructure demands professionals who are able to implement, maintain and protect these systems.

I am currently undertaking an MSc in cyber security and this essay will argue that, in doing so, I am making myself better equipped for an advanced role in this dynamic industry as well as actively contributing to the research of the field.

Requirement in Job Listings

The importance of a degree, to the person studying it, is often directly linked to the career prospects that it provides. Whilst roughly 6% of the working population in the UK is thought to have a postgraduate degree (Taylor, 2019), 24% of cyber security job

listings prefer that the candidate has one (Marquardson & Elnoshokaty, 2020). We can infer that the demand for postgraduate degrees is proportionately high; implying that companies value their contribution to an individual's suitability to cyber security roles. In fact, ISACA's survey shows that only 37% of respondents say their company doesn't require any sort of degree for an entry-level position and 64% say that a degree is at least somewhat important to determining whether a candidate is suitable (2023).

However, some top industry employers such as Google, Facebook and Oracle now advertise advanced level positions that don't require a postgraduate degree (Hill, 2019) although it is worth noting that it is often still preferred. It can be speculated that removing the requirement of a postgraduate degree from a job listing is likely reflective of a societal change towards more inclusivity in the workplace, as opposed to diminishing approval towards the degrees themselves.

Relevance of Degree Content

Another key consideration is the relevance of the curriculum studied. The academic writing produced by the individual will be related to the content of the degree and is likely to be read by and inspire the writing of future students. The content of the degree therefore plays a part in dictating the values of the cyber security community and the direction of advancements in the field.

Interestingly, according to Fred B. Schneider, the cyber security curriculum is not optimised for the working environment as top researchers and industry experts are often

not involved in faculty decisions (2013). This could imply that work experience is more valuable than post graduate education as hands-on working is likely to involve protecting against and actively combating cyber threats. However, he also comments that knowledge of past attacks isn't enough when it comes to education (Schneider, 2013). This is reasonable as the very nature of successful cyber attacks often requires exploiting a weakness that the victim has not considered. It is therefore logical that the study of principles and concepts at postgraduate level can provide knowledge that facilitates anticipation of threats beyond those previously experienced.

Personal Experience

Working for BT Defence, I have witnessed first hand the damage that can be caused by a successful cyber attack. This prompted my research into cyber security online and I found myself quickly engaged, but also realising the immense amount of knowledge required to properly understand current affairs. This is exacerbated by the constantly evolving and upgrading nature of technology. After scanning through the vast number of certifications available, it became apparent that the structure, content coverage and research opportunity of an MSc in cyber security was optimal for my personal development.

My expectations for the course are that I will be provided with the tools to conduct in-depth and varied research into the subject and hence be able to contribute valuable, well written papers to the field. In turn, I hope for my learning to allow for fulfilling career

progression where I can confidently make positive changes and implement successful cyber security principles.

Conclusion

This essay has considered the importance of postgraduate degrees to an individual's engagement in the subject, but also to the field of cyber security and the benefit to the wider community. The topics discussed above will most certainly become even more relevant with the cyber security industry expecting an annual revenue growth of 11.82% over the next 5 years (Statista, 2023) which will inevitably include hiring more appropriately skilled people. There is further discussion to be had to ascertain whether the level of research undertaken in a postgraduate degree increases the likelihood of being appropriately skilled for a given role.

References

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