

The Importance of a Postgraduate Degree in Cyber Security

Education in the field of Computer Science, more specifically the field of Cyber Security, is gaining increasing importance. Having experts in this field is a necessity to tackle the immense increase in cyber threats in recent years. Due to the ever-evolving nature of these attacks, professionals not only need to be able to circumvent current attack vectors but also need to have the right skill set to prevent new kinds of threats that may arise. This essay will explore the importance of postgraduate degrees to educate said professionals.

I am undertaking the MSc in Cyber Security at the University of Essex Online, which not only aims to introduce fundamental concepts and tools but also offers modules on the human factor in security including managerial and psychological concerns (University of Essex Online, N.D.).

Cyber Security is a domain where agile and independent thinking is a required skill. Security risks are continually evolving, and threat vectors are ever-changing. A notable example of this is the tremendous increase in mobile malware attacks in 2018. In comparison to 2017, the number of mobile malware attacks has nearly doubled – from 66.4 million (2017) to 116.5 million (2018) attacks (Kaspersky, 2019). Malwarebytes even labelled 2018 as the as “the year of the mega breach”. Major businesses such as Facebook, Marriott and Quora had their services breached, with “hundreds of millions” of users affected. In 2018 alone, the number of user records that were compromised has increased by over 133% compared to 2017 (Malwarebytes, 2019). However, not only has the quantity of attacks increased, the quality of malware is evolving as well. “Highly sophisticated mobile banking threats” have also made their appearance in 2019 (Chebyshev, 2020).

A high number of security experts with the necessary skill set are required to combat the increasing number of cyber threats. Globally, companies of all industries and sizes see a significant shortage in their cyber security workforce. This shortage continues to be the primary concern for those working in the IT industry. (ISC)², a non-profit organisation which specialises in training and certifications for cybersecurity professionals, has conducted a global study in 2019, to identify how massive the skill shortage is. Based on an online survey with 3,237 individuals from the (cyber) security domain, (ISC)² was able to estimate a global demand of around 4.07 million professionals. Currently, there are only 2.8 million professionals in this field. Therefore, to meet the global demand, the global supply of cyber security experts needs to grow by 145%. In Europe alone, the results indicated that the gap has almost doubled since 2018 ((ISC)², 2019).

In my experience, this has been very apparent. I am currently working as a Project Manager of an SME Insurtech company in Malaysia, and we are facing the same issue. The company has been searching for a security expert to help develop safe company guidelines and processes; however, the number of applications we have received and the quality of applicants has been a significant problem. This was one of the reasons I have decided to pursue this MSc programme.

A postgraduate degree provides not only the tool set to act but also the mindset to tackle new problems and obstacles; an essential skill set to have in this ever-evolving field. A study conducted in Canada in 1998 provides evidence for this. Lethbridge (1998) surveyed 168 professionals in the software industry to determine the relevance of their respective education concerning their careers. Out of the 168 participants, 80 had studied computer science or software engineering and 50 held a postgraduate degree. In the survey, Lethbridge posed a question on the importance of individual

subjects in their education, as opposed to gaining the ability of “learning how to think”. Notably, the participants holding a postgraduate degree thought that their education provided them with the ability of “learning how to think” instead of focussing on smaller details and exact subjects. The study highlights the importance of postgraduate degrees and how one can gain a valuable skill of adaptable and broader thinking (Lethbridge, 1998).

In conclusion, there is a major global shortage of Cyber Security experts with the right skill set to tackle continually changing threats. A postgraduate degree in this field is a great way to educate and train professionals in this field, and to improve the availability of high-quality individuals that not only possess the tools to prevent current attacks but are also to be able to think ahead and prevent new threats. I expect and look forward to being able to contribute to the industry, grow my knowledge and skills as well as identify my areas of specialisation through my MSc in Cyber Security.

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