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Analyzing IT Security Job Trends and Qualifications for a Career in Cybersecurity

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Analyzing IT Security Job Trends and Qualifications for a Career in Cybersecurity

TREO Talk Paper

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Abstract

According to the 2021 SIM IT Issues and Trends Study (2022), IT security has been the top management issue since 2017, the most problematic for CIOs since 2014, and identified as the most difficult area to find talent. Cyber-attacks continue to wreak havoc across various industries, from the financial sector to non-profits (Jennings, 2022). For example, a recent ransomware attack has highlighted that major financial firms can be negatively impacted by cybersecurity breaches that occur within firms and third-party provider industries, even when these breaches involve only minor components of the technical infrastructure that supports the markets (Rundle, 2023).

Despite a recent decline in hiring activity compared to that seen earlier, demand for cybersecurity jobs continues to rise. In particular, there are now 30% more cybersecurity job openings than at the same time in 2021 and 68% more compared to 2020. An estimated 65 cybersecurity professionals are available for every 100 cybersecurity jobs, and demand continues to rise (Ostrowski, 2022). This shortage of qualified candidates presents significant challenges for organizations in a wide range of industries.

In order to address the shortage, it is crucial that the job types, specific skills and competencies required by employers, and how these are changing over time. This information will help job seekers be prepared for the job market by increasing awareness of the expanding list of occupations as well as the skills required (Ostrowski, 2022) and it will aid in better defining the role that educational institutions will play in developing candidates in the future (Triche et al., 2016). This paper contributes to this need by using Latent Dirichlet Allocation (LDA) topic modeling to analyze collected IT security job postings datasets and identify the key topics and themes employers seek.

This study aims to gain a deeper understanding of the IT security job market through the analysis of online job postings. The preliminary results of this study identified 16 topics that are grouped into 10 themes. These results provide valuable information to job seekers on the main topics and themes that are aligned with IT security jobs. In addition, the findings of this study can also be useful for employers to understand the demands in the IT security job market.

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