Understanding Shoulder Surfer Behavior and Attack Patterns Using Virtual Reality

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ABSTRACT

In this work, we explore attacker behavior during shoulder surfing. As such behavior is often opportunistic and difficult to observe in real world settings, we leverage the capabilities of virtual reality (VR). We recruited 24 participants and observed their behavior in two virtual waiting scenarios: at a bus stop and in an open office space. In both scenarios, participants shoulder surfed private screens displaying different types of content. From the results we derive an understanding of factors influencing shoulder surfing behavior, reveal common attack patterns, and sketch a behavioral shoulder surfing model. Our work suggests directions for future research on shoulder surfing and can serve as a basis for creating novel approaches to mitigate shoulder surfing.

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