Accepted Manuscript

Your Culture is in Your Password: An Analysis of a Demographically-diverse Password Dataset

Mashael AlSabah, Gabriele Oligeri, Ryan Riley

PII: S0167-4048(18)30297-9
DOI: 10.1016/j.cose.2018.03.014
Reference: COSE 1320

To appear in: *Computers & Security*

Received date: 5 October 2017
Revised date: 1 March 2018
Accepted date: 29 March 2018

Please cite this article as: Mashael AlSabah, Gabriele Oligeri, Ryan Riley, Your Culture is in Your Password: An Analysis of a Demographically-diverse Password Dataset, *Computers & Security* (2018), doi: 10.1016/j.cose.2018.03.014

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

ACCEPTED MANUSCRIPT

Your Culture is in Your Password: An Analysis of a Demographically-diverse Password Dataset

Mashael AlSabah[a], Gabriele Oligeri, Ryan Riley[b]

[a] *Computer Science and Engineering Dept., College of Engineeering, Qatar University*
[b] *Computer Science Department, Carnegie Mellon University Qatar*

Abstract

A large number of studies on passwords make use of passwords leaked by attackers who compromised online services. Frequently, these leaks contain only the passwords themselves, or basic information such as usernames or email addresses. While metadata-rich leaks exist, they are often limited in the variety of demographics they cover.

In this work, we analyze a meta-data rich data leak from a Middle Eastern bank with a demographically-diverse user base. We provide an analysis of passwords created by groups of people of different cultural backgrounds, some of which are under-represented in existing data leaks, e.g., Arab, Filipino, Indian, and Pakistani.

The contributions provided by this work are many-fold. First, our results contribute to the existing body of knowledge regarding how users include personal information in their passwords. Second, we illustrate the differences that exist in how users from different cultural/linguistic backgrounds create passwords. Finally, we study the (empirical and theoretical) guessability of the dataset based on two attacker models, and show that a state of the art password strength estimator inflates the strength of passwords created by users from non-English speaking backgrounds. We improve its estimations by training it with contextually relevant information.

*Corresponding author
Email addresses: malsabah@qu.edu.qa (Mashael AlSabah), gabriele.oligeri@gmail.com (Gabriele Oligeri), rileyrd@cmu.edu (Ryan Riley)

ACCEPTED MANUSCRIPT

Download English Version:

https://daneshyari.com/en/article/6883881

Download Persian Version:

https://daneshyari.com/article/6883881

Daneshyari.com