Massachusetts Institute of Technology
Department of Electrical Engineering and Computer Science

Proposal for Thesis Research in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy

Title: Protecting User Data in Large-Scale Web Services

Submitted by: Frank Wang
32 Vassar Street, #32-G978
Cambridge, MA 02139

(Signature of Author)

Date of Submission: April 23, 2018
Expected Date of Completion: July 2018
Laboratory: Computer Science and Artificial Intelligence Laboratory

Brief Statement of the Problem:

Web services like Google, Facebook, and Dropbox are now an essential part of peoples lives. In order to provide value to users, these services collect, store, and analyze large amounts of their users sensitive data. However, once the user provides her information to the web service, she loses control over how the application manipulates that data. For example, a user cannot control where the application forwards her data. Even if the service wanted to allow users to define access controls, it is unclear how these access controls should be expressed and enforced. Not only is it difficult to develop these secure access control mechanisms, but it is also difficult to ensure these mechanisms are practical. My research addresses these concerns.

1 Introduction

2 Design

3 Proposed Timeline

References