

# CONSTRUCTING, VISUALIZING, AND ANALYZING A DIGITAL FOOTPRINT\*

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**ABSTRACT.** Herein, we discuss the desire for new technology, the need for security, and the right to privacy; in doing so, we argue that each of these concerns comprises an important, tripartite debate. To highlight the complexities in this problem, we define our notion of a “digital footprint” and introduce BigFoot—specialized software created for the research described here to facilitate visualization and exploration of the data that comprise Stephen Weaver’s personal digital footprint. Using BigFoot we demonstrate how multiple digital personae can be created from the data that constitute one unique digital footprint and provide a methodology for understanding the good and bad impacts that new technologies may have on future societies. One of the primary arguments of this work is that the debate—though not formally recognized—is currently before contemporary society and must receive sufficient attention. *Keywords:* digital footprint, digital persona, privacy, security, surveillance.

Whenever a new technology is born, few see its ultimate place in society.

—Paul Ceruzzi, [1986] 2000

In the age of pervasive, ubiquitous computing, concerns written about by science-fiction authors such as Aldous Huxley and George Orwell in the early twentieth century have found a new and poignant relevance, one that has escalated dramatically as events related to the United States’ “war on terrorism” have progressed. Although the need for an improved intelligence infrastructure in the United States is undeniable, present threats to personal privacy have no historical analogue (except in science fiction). Concurrently, exciting new technologies that make use of federated databases and location-aware technologies are becoming increasingly available for all manner of uses. These technologies—as with those that comprise an effective intelligence infrastructure—have vast potential to both benefit society and erode personal privacy. It is imperative, therefore, to foster an informed public debate concerning the desire for new technology, the need for security, and the right to personal privacy.

In this article we discuss these three intermingled concerns; and in doing so we make an effective argument for the necessity of recognizing that all three are not only salient but also mandatory in discussions concerning the use and misuse of new location-aware technologies. Additionally, we define our notion of a “digital footprint”—the digital traces each one of us leaves behind as we conduct our lives—and describe our attempts to visualize this footprint using specialized software developed as part of this research. This article contributes to the privacy/security/technology debate by offering practical examples of the possibilities for constructing digital “profiles” of individuals and groups using current and emerging technologies. It

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\* This article grew out of Stephen Weaver’s master’s thesis, portions of which are reproduced with the author’s permission.

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