

What LIS graduates need to know about computing – the case of the PDF file format – Jean-François Blanchette

Abstract

LIS programs have been faced for years with the question of how to best teach students adequate information technology skills. In past decades, the answer often took the form of basic computing literacy (how to write an email, how to set up a basic database), but today, the consensus is that the most obvious representative of such a skill is the mastery of a programming language. Indeed, coding is supported today by a wide range of organizations as the most direct path of entry into the computing professions and as a requisite skill for all future workers in the knowledge economy.

In this presentation, I challenge this assumption as it applies to graduate students enrolled in LIS programs. I argue that the teaching of coding aligns with a conception of computing primarily grounded in its mathematical character as an “engine of logic.” However, an equally important understanding of computing lies in its nature as an engineered system dedicated to the coordinated use of limited computing resources (processing, storage, networking). Of particular importance are the design strategies of modularity and hierarchical aggregation, which allows computing systems to allocate resources, manage complexity and technical change, while providing specific pathways for growth and functional evolution. These resources and strategies constitute the actual materials and tools used by engineers to design, operate, and maintain the extraordinarily complex assemblage of software and hardware components that constitutes networked computing.

For students, such as those in LIS, whose career success depends on the proper anticipation of the impact of information technology on their field of professional practice, such an understanding is more effective than learning to code. Using the PDF file format as example, I demonstrate how this approach can be used to anticipate the evolution of the format and its impact on, e.g., digital preservation, open data, accessibility, and the future of scholarly communication.

Bio

[Jean-François Blanchette](#) is an Associate Professor in the Department of Information Studies at UCLA. His research focuses on the computerization of bureaucracies, the evolution of the computing infrastructure, and the materiality of digital objects. He is the author of [Burdens of Proof: Cryptographic Culture and Evidence Law in the Age of Electronic Documents](#) (MIT Press, 2012) and co-editor of [Regulating the Cloud: Policy for Computing Infrastructure](#) (MIT Press, 2015). He is the director with Snowden Becker of the “[On the Record, All the Time](#)” project, which examines the impact of surveillance technologies to archival education and practice.