Viewing Computing Ethics through an Open Source Lens

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Abstract

In the context of teaching an upper-division undergraduate Computing Ethics course, we describe how the OPEN SOURCE model may be studied by students, and presented by an instructor, as a unifying methodology for the concomitant exploration of the ten topical units specified and prescribed by the *2001 ACM Computer Science Computing Curricula*.

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Under many common licensing conditions, Open Source enables and facilitates collaborative user-generated software development.

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Note: OPEN SOURCE is not synonymous with *public domain*.

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Surely, the OS model will be used pervasively and profoundly in many contexts of students' future lives.

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Computing educators should therefore integrate an introduction to the OPEN SOURCE model into the computing curriculum.

A <u>Computing Ethics</u> course would be an appropriate context for this introduction.

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Some currently popular texts for the Computing Ethics course are careful to cover comprehensively this ten-unit template.

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I assign a term paper which discusses the OS model in the context of the ten units as described below.

Computing Ethics Unit Outline

SP1 History of Computing

SP2 Social Context of Computing

SP3 Methods and Tools of Analysis & [SP10] Philosophical Frameworks

SP4 Professional and Ethical Responsibilities

SP5 Risks and Liabilities of Computer-Based Systems

SP6 Intellectual Property (IP)

SP7 Privacy and Civil Liberties

SP8 Computer Crime

SP9 Economic Issues in Computing

[SP1] History of Computing

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The origins of both the Free and Open movements can be outlined.

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International issues and higher education have been addressed by MIT with its *OpenCourseWare* initiative.

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Quinn critiques OS and IP in the context of *rights-based/social contract* and *consequentialist/utilitarian* arguments.
Berry explores the use of the OS model in collaborative ethical analysis in a specific domain (Internet research). Sunstein could be used for further analysis.

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E.g., consider that the act of *disclosure* in various contexts often serves to satisfy one or more ethical obligations. The primary attribute of the OS model *is* disclosure.

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One can discuss the obligation of maintaining professional competence and currency. In reading other's code, maintaining code, and originating code, one is developing, honing, and enhancing one's acumen, knowledge, and abilities. Kasper Edwards analyzes this learning process.

[SP4] **Professional and Ethical Responsibilities**

One of the primary topical concerns of this unit is *the role of the professional in public policy*. As the OS model increasingly mediates and hosts public policy debate and analysis, those having a more sound understanding of and facility with the OS model will better address their professional obligations in the context of public policy.

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We have witnessed the profound effect the *blogosphere* has produced, just in the last decade, in the context of public policy debate. See Sunstein for a discussion of the influence of *blogs* on public policy.

[SP5] Risks and Liabilities of Computer-Based Systems

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With a nod to Norbert Wiener, a cybernetic definition of computer-based systems includes people as an integral component of the system, able to influence and be influenced by the hardware and software.

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Another noted benefit of the OPEN SOURCE software model is that there are *many eyes* examining and testing the software as a whole or in part.

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Ridley provides some anthropological bases for the seemingly altruistic behavior of OS model participants. He explains the cooperative drive as an evolutionary one whereby the exchange of favors confers mutual benefit.

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Recently, the US Patent and Trademark Office has decided to use a *Community Patent Review* OS model peer review process in an attempt to improve its actual and perceived performance.

[SP7] Privacy and Civil Liberties

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The EFF is also sponsoring and advocating the use of an OS Internet anonymizer project,

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Ordinary users will utilize the White Hat products and services for their own protection and safety, whereas Script Kiddies will rush to exploit the malware developed by the Black Hats. A current intense security policy debate concerns the utility of vulnerability disclosure, and more critically,

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Ridley is again appropriate reading for helping to understand the OS economy explained by Eric S. Raymond as a *gift culture*.

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monopoly value the value you gain not just from having the use of a program but from having it be *unavailable to your competitors*.

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A more mathematical economic discourse is offered by Johnson.

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