NON-FICTION

***Database Nation: The Death of Privacy in the 21st Century* by Simson Garfinkel**
(Cambridge: O'Reilly, 2001)
Robarts: JC596.2 .U5 G37 2001X
This book postulates that the extreme death of privacy imagined in George Orwell's dystopian novel 1984 is, in fact, becoming reality—just in a different sense than a single surveilling Big Brother. Garfinkel points to numerous examples of ways in which data about individuals are collected. In the decades following the book's publication, more examples could be added to the list: GPS-enabled mobile phones, medical records, surveillance cameras, and so forth. Ultimately, this book is a call to action for individuals to become aware of the ways in which their privacy is being threatened every day, and for governments to implement better privacy laws. Though this book is somewhat outdated, and the author's solutions may not be practical, it raises important issues that anyone involved in database management should consider—including data collection, storage, sharing, and security.

***Hackers: Heroes of the Computer Revolution* by Steven Levy (Sebastopol, CA: O'Reilly, 2010)**
UofT at Mississauga: QA76.6 .L469 2010
First published in 1984, this book explores the history of computing from the 1950s to 1980s through the stories of the genius programmers who shaped the personal computer industry. The title refers not to the current stereotype of malicious hackers, but to the original hacker ethics of innovation and risk-taking that emerged in earlier days and shaped the direction of modern computing. The updated edition includes profiles on such notable individuals as Steve Jobs, Bill Gates, and Mark Zuckerberg. This book will appeal not only to novice programmers, undoubtedly contributing to an understanding of how computers work, but also to experts who want to learn more about the history of modern computing.

FILMS

***The Social Network* directed by David Fincher**
(Columbia Pictures, 2010)
Media Commons: VideoDVD 756617
Did you ever wonder how a Harvard dropout founded the company that had the largest initial public offering on the stock market in Internet history? It all started with a dorm room, a sophomore computer programmer, and a database of names and photos of his fellow college students. This film follows Mark Zuckerberg and his friends/enemies from the initial concept for the site to the lawsuits that followed when Facebook struck gold. At best it is loosely based on the true events (Zuckerberg and others involved have criticized it for many inaccuracies!), but nonetheless it is an intriguing look into the possibilities that can come from innovative programming. Viewers might also be interested in the book on which the movie was based, *The Accidental Billionaires: The Founding of Facebook, a Tale of Sex, Money, Genius and Betrayal* by Ben Mezrich.

***Minority Report* directed by Steven Spielberg**
(Dreamworks/Twentieth Century Fox, 2002)
Media Commons: VideoDVD 750316
This film imagines a world where the Precrime police unit can pre-emptively stop murders before they happen, thanks to three "precogs" whose drug-induced mutations let them see murders before they happen. The reports generated by the precogs are recorded in Precrime's database and then assembled by Precrime staff for judges to view. This technology system is believed to be infallible and is given the utmost power in society, to the point where it will incriminate even Precrime's Captain John Anderton. As Anderton fights to prove his innocence, the film explores classic philosophical questions of free will versus determinism as well as newer dilemmas relating to authority over technology. Does power come from the images that are stored in the database, or from those who manipulate and interpret them?

FICTION

***Burning Chrome* by William Gibson**
(New York: Arbor House, 1986)
Robarts: PS8563 .I282 B87 1986
William Gibson's only collection of short stories is (mostly) set in the same conceptual universe—"Sprawl"— as his well-known novel *Neuromancer*. The stories are gritty, exploring the dark side of technology, and truly iconic of the cyberpunk genre. In the title story, hackers Bobby Quine and Automatic Jack break into a notorious criminal's money transfer system that is used to facilitate organized crime. "Burning Chrome" is also the story in which Gibson coined the term "cyberspace," and it is essentially a precursor to *Neuromancer*, including many of the same characters and elements such as cowboy hackers, viruses, and Intrusion Countermeasures Electronics (ICE). In "Johnny Mnemonic," the main character has a data storage system implanted in his head, which not only allows him to transmit data securely to the intended recipient, but also makes him an assassin's target. Gibson's stories depict a fascinating near-future in which technological innovations and mishaps take place in the underbelly of society, controlled by individuals rather than corporate giants. See also: *Neuromancer* by the same author.

***Cryptonomicon* by Neal Stephenson**
(New York: Avon Press, 1999)
Robarts: PS3569 .T3948 C79 1999X
Hackers, treasure hunting, Nazi history, government conspiracies, and data warehouse creation: this acclaimed novel has it all. *Cryptonomicon* follows two connected storylines spanning World War II and the 1990s. Lawrence Waterhouse, a U.S. Navy captain and expert mathematician/cryptographer, is a key player in the Allied mission to crack Axis communication codes without being detected. More than fifty years later, his grandson Randy, a genius programmer and hacker, is on a different mission—to create an offshore data warehouse in Southeast Asia that will allow encrypted information to be stored and shared without government interference. His efforts uncover not only a small fortune that was once intended for Nazi pockets, but also a massive conspiracy involving his grandfather's top-secret mission and an unbreakable Nazi code.

***Digital Fortress* by Dan Brown**
(New York: St. Martin's Press, 2004)
Intercampus delivery from Baycrest Hospital.
Check your local public library!
How far should a government be allowed to go in collecting data on its citizens, and what happens when these data are at risk of being exposed? These questions form the background of Dan Brown's debut novel. When the National Security Agency (NSA) invents a supercomputer (TRANSLTR) that can supposedly crack any encryption, a disgruntled former NSA

employee takes issue with the privacy invasion that TRANSLTR facilitates. To retaliate, he designs an algorithm that, if unleashed, will cripple TRANSLTR and devastate US intelligence operations. While the senior cryptologist works furiously to track down the password that will save the system from crashing, her boss—who has devised complicated plots of his own—inadvertently introduces a virus that renders all the NSA's data vulnerable to hackers.

***Microserfs* by Douglas Coupland**
(New York: Regan Books, 1995)
Robarts: PS8555 .O816 M53 1995X
Take a nostalgic detour back to the mid-1990s, just before the technology boom. In this coming-of-age story about pre-Google geek culture, six computer geniuses live as slaves to their low-level positions at Microsoft before branching out on their own start-up project. They face many challenges along the way as they try to come to terms with their identities, connect with each other, and navigate a culture increasingly mediated by technology. Told in a digital journal format, complete with emoticons and the occasional coded message, this snapshot of a specific generation will resonate with anyone who has even the vaguest recollection of the time when society was on the cusp of digital submergence. Read this book not for the (now dated) information technology references, but for Coupland's prediction of how humanity would come to interact with computers, which will seem uncannily accurate to an overwhelming number of readers.

***Neuromancer* by William Gibson**
(New York: Ace Books, 2004)
Victoria University E.J. Pratt: PS3557 .I2264 N48 2004
Henry Dorsett Case was once the best data thief out there, but he is left jobless when he is caught stealing from his former employer. As a punishment, he is cut off from entering "the Matrix" (the global virtual reality network) by damage to his nervous system that renders his brain-computer interface useless. But a mysterious new employer suddenly offers him a cure in exchange for his hacking services. His mission: to crack the code of an incredibly secure databank that orbits Earth. A complicated heist/hack plot ensues. With this novel, Gibson simultaneously invented the cyberpunk genre and set the bar high for a new era of science fiction. These achievements have been well-rewarded with all the top science fiction honours: the Hugo, the Nebula, and the Philip K. Dick Awards.

AND EVEN A CLASSIC. . .

***Frankenstein* by Mary Shelley**
(San Francisco: Ignatius Press, 2008)
Robarts: PR5397 .F7 2008
What does Mary Shelley's 19th century gothic horror story have in common with 21st century data modeling and database design? Both involve theoretical and ethical issues of scientific creation. Scientist Victor Frankenstein is obsessed with learning the secrets behind the origin of life. Though he succeeds in producing a living creature from dead body parts, his project backfires as it results in a hideous monster that loathes its creator and wants revenge. Frankenstein must face up to the moral repercussions of exploring a realm of science that should remain beyond human understanding. Though database designers do not need to ponder these extreme life-and-death ethics, they often need to make critical decisions involving tradeoffs on issues of privacy, security, and access—and advances in augmented reality and virtual life may someday make Frankenstein's dilemma come true for computer programmers. This is a must-read for anyone who wants to explore the ethical aspects of scientific design.

Questions? Need more suggestions?

Email cynthia.griffioen@utoronto.ca

Imagining...

Data Modeling & Database Design

A leisure reading & viewing guide for students of INF1343H