

VAST 200: Computers and Society, Spring 2012

AEC 500

9:00-9:50 MWF

Course webpage: http://www.cs.lafayette.edu/~taylorm/2012_VAST200/index.html

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Computer scientist Alan Kay has stated, “The best way to predict the future is to invent it.” Since the middle of the last century, computer scientists have been crafting an intellectual extension that enhances our cognitive attributes. It can be argued that this extension is one of the single most powerful recent advancements in technology. What does this proposition mean, how has it proven true, and what will it mean for the future? Are we crafting a future – by constructing our present – from devices created just a few decades ago?

Course Reading List (The reading schedule will be posted on the class website.)

<i>A History of Modern Computing</i> , 2nd Edition	Paul E. Ceruzzi	The MIT Press, 2003
<i>Gift of Fire</i> , 3rd Edition	Sara Baase	Prentice Hall, 2008
<i>Rebuilt</i>	Michael Chorost	Mariner Books, 2006
<i>Wired for War</i>	P.W. Singer	Penguin (Non-Classics), 2009
<i>The Singularity is Near</i>	Ray Kurzweil	Viking Press, 2005
Selected articles and media		

Course Objectives/Learning Outcomes

Students will have:

- An understanding of professional, ethical, legal, security and social issues and responsibilities
 - Students will be able to discuss the professional, legal, and societal issues revolving around computers in terms of the ethical impact they present.
- An ability to communicate effectively with a range of audiences.
 - Students will be able to present a topic that affects society as a whole and then present the views of a particular subsection of the larger population.
- An ability to analyze the local and global impact of computing on individuals, organizations, and society
 - Students will be able to present a specific development in computational technology and describe it impacted different aspects of society.
- Recognition of the need for and an ability to engage in continuing professional development
 - Students will be able to discuss how computers have changed since their inception and in what ways people must adapt to respond to these changes.

Topics and Class Organization:

The class focuses on the ethical aspects of computation and how it relates to the culture that uses these devices. Several different cultures will be considered, including both the developer and user culture. The course is divided into three time periods: yesterday, today, and tomorrow. The goal of this division is to determine how these computational devices came to be, how these devices are currently used in society, and what form computers will take in the future. A brief outline of topics is provided below and serves as an initial course direction.

- Yesterday
 - Pre-history of computers
 - Reasons for computer development
 - Computer visionaries Alan Turing, John Von Neumann and Norbert Wiener
 - ARPANET
 - Artificial Intelligence and Cybernetics
 - Cataloging of Society
- Today
 - Robotics, parallel-computation, and technical advances
 - The Open-Source movement
 - Network Neutrality and The Patriot Act
 - Corporations, Data-Mining, and Digital Rights
 - Globalization
 - Bioinformatics
 - Sensory Implants
 - The Two-Tiered society
- Tomorrow
 - Biological implants and replacements: future directions
 - Robotics
 - Molecular computing, nano-computing, and bio-computing
 - Artificial Life, Artificial Intelligence, and Artificial Cognition

Assessment Information and Grading Policy

The course grade (subject to change with notice) will be based on:

- Paper 1: 15%
- Paper 2: 15%
- Paper 3: 25%
- Group Project: 15%
- Class Participation: 30%

Major Writing Projects

Paper 1 How Did We Get Here

Minimum: 1250 words

Topic: Looking at the history of computers and computation, give a narrative of how we got to the place we currently are. The article will include a historical progress focusing on a certain aspects of computers to illustrate the broader progress that computers have followed in our society.

Goal: The goal for this paper is to develop a story that examines a single aspect of computers to tell the broader story of how computers have developed and the impact they have had on society.

Week 2 Monday -- Distribute paper 1 assignment document.

Week 4 Monday -- Writing Associate draft of paper 1 due; register for WA conference.

Week 6 Monday -- Final draft of paper 1 due.

Paper 2 Visions of the Future

Minimum: 1250 words

Topic: Looking at current trends and projecting into the future is a good approach to determine what will be coming down the line. For this paper, take a sector of computers and project how this sector will progress into the future.

Goal: The goal for this paper is to look at the world in a hypothetical way to determine what will happen. You will be given a great deal of latitude in how you formulate this paper, but it should be grounded by current research trends in computer science.

Week 6 Monday -- Distribute paper 2 assignment document.

Week 8 Monday -- Writing Associate draft of paper 2 due; register for WA conference.

Week 10 Monday -- Submit the final draft of paper 2.

Final Paper Computers as Ethical Machines

Minimum: 2500 words

Topic: The class has dealt with the technology of computers and what effects these machines have on the society as a whole. Looking at the entire breath of computers, draw a common thread from the history of computers and project it into the future. Then discuss what are the effects of having these machines in our lives and what ethical issues they pose.

Goal: The goal for this project is to produce a cohesive article that combines your previous papers into a larger position paper about the role of computers in society. The work should have a common thread that pulls all three papers together and introduces new ideas that fits everything together.

Week 10 Monday -- Distribute final paper assignment document.

Week 11 Monday -- Submit a plan for your paper, and meet with the WA.

Week 13 Monday -- Writing Associate draft of final paper due; register for WA conference.

Week 14 Friday -- Submit the final draft of final paper.

Group Project Legal Perceptions of Computers

Minimum: TBD

Topic: Computer history is filled with questions of individual rights, property, and questions of freedom. This project will ask each group to tackle a specific aspect of these broader societal issues. Over a few weeks the teams will develop the different issues, create, and present a white document that outline the issues. The document will be a group document that broadly discusses the issue, but also has sections authored by each individual presenting a specific subsection of our society. These subsections will breakout to: conservative politician, liberal politician, conservative electorate, and liberal electorate.

Goal: The goal of this is to come to understand the nuances of these issues, but also understand how they relate to other similar issues. Additionally, to gain an appreciation how both government and members of the electorate view these decisions.

Submission and Grading Policy

For this course, the article format is secondary to the content. The following is a list of requirements in addition to any rubrics that are required for a given submission.

- All major assignments will be submitted electronically to the Lafayette College Moodle by 11:59pm of the day it is due.
 - Submissions can be submitted early, and
 - Resubmissions will be allowed.
 - **The Moodle site will be configured to reject late assignments.**
- All major assignments will be submitted in Word .doc or .docx formats. If you wish to submit in another format (e.g., .pdf or .ods), check with Matt first.
- If a Writing Associate meeting is required, then the assignment will not be accepted if the meeting has not been kept.
- Grading will be performed based on assignment requirements and all provided writing rubrics.
- All articles will have a minimum word requirement, which is in replacement of a page requirement. (Note that this document has over 1,500 words.)
- A suggested document formatting is given below, but you are allowed what you prefer.
 - 12 point Times font
 - 1.5 line spacing
 - 1 inch margins
- Any supporting material in addition to the paper is welcome, but cannot be incorporated in the paper.

Classroom Requirements

A significant portion of your grade is based on classroom participation, with the primary goal of each student working toward the betterment of the overall classroom environment. Classroom participation is determined by how each student conducts themselves relative to the following points.

- Lecture attendance – students will make their best effort to attend all classes and inform the instructor when they cannot.
- Be prepared – students will be prepared for discussing readings and requested tasks by performing the required work and writing a short summary of what they encountered.
- Engage with your peers – students will make their best effort to contribute to a positive interaction with their peers during class discussions.
- Engage with your faculty – students will make their best effort to interact with the instructor when something is unclear or the student thinks differently.
- *Don't panic* – students will make their best effort to try to wade into topics they do not fully comprehend so that they may better come to an understanding of these topics.
- Bravery counts – students that really want to make a point, even at the expense of looking foolish, must attempt to find the courage to do so.
- “I do not know” is not an answer.
- A wrong answer is still an answer.

Academic Honesty Statement

All students are expected to adhere to the college policy on academic honesty as listed in the Student Handbook. This policy covers the use of another person's writing, use of reference materials, use of other student's work, working together, and reuse of papers. If any intellectual dishonesty is detected, the suspect materials will be sent to the Dean of Studies for review.

Request for Accommodations

In compliance with Lafayette College policy and equal access laws, I am available to discuss appropriate academic accommodations that any students with a disability require. Requests for academic accommodations need to be made during the first two weeks of the semester, except in unusual circumstances, so that arrangements can be made. Students must register with the Office of the Dean of the College for disability verifications and for determinations of reasonable academic accommodations.