Societal Context Assignment

CE 599-002: Data Science in Transportation

Spring 2018

The assignment is to consider one of three books or reports, and communicate, both in class and in writing how the literature relates to contemporary issues in transportation and data science.

The task is assigned in the hope that it provides a model by which students can continue to engage with the larger implications of their work, in their role as engineers and as citizens.

Deliverables

The deliverables for this assignment are:

1. The student must coordinate with the other students assigned the same topic to facilitate a 20-30 minute in-class discussion. Students assigned other topics will not have read the material, so the discussion must start with a concise summary of the assigned book/report, and focus on key questions as it relates to contemporary issues.

2. A 5,000-word essay addressing the topic at hand. The essay should be completed individually, and incorporate information from the source material, from the in-class discussion, and original ideas reflecting the student's own thinking.

Topics

There are three topics to choose from. Students should email the professor with their first, second and third choice, and the topics will be assigned such that there is an equal distribution of students to topics. Each is described below.

Topic 3: Engineers rule the world\*\*

Read the following:

Kurt. Vonnegut. Player Piano. New York: Delacorte Press, Delacorte Press/Seymour Lawrence, 1952.

Vardi, Moshe. “Humans, Machines, and the Future of Work.” In Ada Lovelace Symposium 2015- Celebrating 200 Years of a Computer Visionary. Ada Lovelace Symposium ’15. New York, NY, USA: ACM, 2015. https://doi.org/10.1145/2867731.2867733.

In his first novel, published in 1952, Kurt Vonnegut envisions a future in which machines have automated both menial labor and menial calculations. In this world, the engineers have the skills needed to fix and advance the machines and have become the ruling class.

Moshe Vardi is a computer scientist with expertise in artificial intelligence, and a member of the National Academy of Science and the National Academy of Engineering. In his lecture at the UK College of Engineering (https://uknow.uky.edu/uk-happenings/lecture-humans-machines-and-future-work-thursday) he discussed the implications of automation on the future of work.

In the present day, automated vehicles are being rapidly developed. As transportation engineers, we are faced with the task of determining how those vehicles can and should interact with the rest of the transportation system, and with the transportation sector of our economy and our society. Your essay should consider this interaction, and propose steps to be taken to promote the public health, safety and welfare.

\*Optional:\*

Listen to:

Madrigal, Alexis. Containers. Accessed March 14, 2018. https://itunes.apple.com/us/podcast/containers/id1209559177?mt=2.

Discuss what the history of containerization can tell us about what to expect from autonomous driving systems.

<https://en.wikipedia.org/wiki/Player_Piano_(novel)>

<http://www.theimaginativeconservative.org/2013/02/a-player-piano-for-twenty-first-century.html>

<http://www.supersummary.com/player-piano/summary/>

<http://www.angelfire.com/trek/playerpiano/overview.html>

<https://www.nytimes.com/1952/08/17/books/vonnegut-player.html>

<http://www.vonnegutreview.com/2013/06/player-piano-one-dimensional-society.html>

<http://www.bookrags.com/studyguide-player-piano/#gsc.tab=0>

Book

It depicts a [dystopia](https://en.wikipedia.org/wiki/Dystopia) of [automation](https://en.wikipedia.org/wiki/Automation), describing the negative impact it can have on [quality of life](https://en.wikipedia.org/wiki/Quality_of_life). The story takes place in a near-future society that is almost totally mechanized, eliminating the need for human laborers. This widespread mechanization creates conflict between the wealthy upper class—the engineers and managers who keep society running—and the lower class, whose skills and purpose in society have been replaced by machines.

Third world war

Most of the Americans were fighting overseas and workforce depleted

Nations managers and engineers responded by developing ingenious automated systems that allowed the factories to operate with only a few workers – most of the factory workers were replaced by machines.

10 years after war – when most of the factory workers were replaced by machines

The population was bifurcated – where every person who is neither a manager nor an engineer lives, and the other side of the river, where all the engineers and managers live

Vonnegut’s main concern is with the price humanity will pay with ever increasing rates of mechanization and centralized planning.