Value Sensitive Design

Spring 2018-2019
B.S. Informatics
Information School
University of Washington

Introduction to value-sensitive design (VSD), information system design that accounts for human values in a principled and comprehensive manner. Examination of existing systems from a VSD perspective. Explores VSD research methods including conceptual, technical, empirical investigations. Key values include accountability, autonomy, consent, privacy, property, trust, sustainability (5 credit hours).

Meeting times

Lecture Tuesday 8:30 – 10:20
Studio Thursday 8:30 – 11:20

Instructor

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Overview

Value sensitive design, pioneered in the 1990s by Batya Friedman, Professor, University of Washington Information School, refers to an approach for designing tools and technology, especially information systems. The approach offers theory and method for accounting for human values in a principled and comprehensive manner. A "value" is defined as: "*what is important to people in their lives, with a focus on ethics and morality*." Example values include human dignity, environmental sustainability, human well-being, fun, freedom of expression, inter-dependence, intimacy, access, to name just a few.

This class is an introduction to the theory and method of value sensitive design. We shall explore how values might or might not come to be embedded in information systems; the human-tool interactional stance; direct and indirect stakeholders; designer values, explicitly supported values, and stakeholder values; and the co-evolution of technology and social structure. Most of all we shall discuss a variety of different values and explore how values held by individuals, groups, and societies can be addressed during design.

In addition, we shall develop practical skills for a range of methods including:

- Direct and Indirect Stakeholder Analysis
- Value Scenario
- Value Sketch
- Value-Oriented Semi-structured Interview
- Model of Informed Consent
- Value-Oriented Mock-up
- Value Dams and Flows
- Futures Workshop
- Value Sensitive Action-Reflection Model
- Envisioning Cards

Value sensitive design can be used with other methodologies and methods in information system design and we shall explore some points of intersection, specifically with usability engineering, scenario-based design, and participatory design. See: www.vsdesign.org

Overview of Class Meetings

Each week will generally follow the same pattern – Theory-Tuesdays and Practice-Thursdays.

Lectures. On Tuesdays, we will begin with a lecture on the key concepts of the week and move to a class discussion of the readings. We will aim to thoroughly understand the authors' views and to critically examine how they can be applied to address human values in design.

Studios. On Thursdays, we will pursue a design activity where we will analyze a problem and work toward a solution using a method. We will aim to develop practical skills. The class will end with a reflective discussion.

Your Prototyping Kit

We will spend a good deal of time sketching, outlining, and making low fidelity prototypes. You should prepare a prototyping kit, consisting of:

- Scissors
- Glue-stick
- White unlined paper
- Colored construction paper
- Pencil and eraser
- Colored markers
- A pack of sticky notes
- Other inspiring craft materials

Please bring your prototyping kit to studios on Thursdays.

The Envisioning Cards

The *Envisioning Cards* are a versatile toolkit for attending to human values during design processes. The cards are a leading-edge design method.

You will find them to be useful throughout your studies at the UW Information School. And, with practice, you'll find them to provide a unique perspective on information systems. They will help you be critical and generative.

See: www.envisioningcards.com

Please purchase the *Envisioning Cards*, available at the UW Bookstore. Bring the cards to all studio sessions:

Friedman, B., Nathan, L. P., Kane, S., and Lin, J. *Envisioning Cards*. University of Washington, Seattle, WA, USA, 2011.

Activities and Assessment

The class grade will comprise the following components, striking a balance between theory and practice as well as between individual and group work.

Design Practice (70%)
Design Activities (40%)
Mini Project (30%)

Design Theory (20%)
Four Writing Assignments (20%)

Reflective Practice and Class Participation (10%)
Optional written statement

Design Practice. This work will give you an opportunity to develop your skills for design.

Theory: Writing Assignments. The four writing assignments (each worth 5% of your final grade) will prompt you to study the readings carefully, to develop an understanding for the authors' views, and to take a position on them. I will use your written statements to structure our class discussions; you may, of course, also be asked to defend or elaborate your position in class.

Reflective Practice and Class Participation. INFO 444 should be challenging, interesting, and fun. Most of all you should develop your skills in reflective practice. Accordingly, you may write an optional 2 or 3 paragraph personal statement on your contributions to the class. Your reflection could summarize how you have sought to improve the learning environment, your personal goals for participating, how your experiences contributed to our learning, and so on. You might focus on lessons learned and things that you will try in subsequent classes, difficulties you encountered in your learning and how you addressed them and so on.

Submitting your participation statement is optional.

Weekly Topics and Readings

PART I: INTRODUCTION

Week 1 (Apr 1-7): Human values and technology - Opening questions

Lecture and discussion

I will give a course overview and ask some of the key questions that we will take up throughout the quarter. One such question: What is a value? I will give a working answer to this question at first meeting and we'll be off and running!

Readings

Friedman, B., Hendry, D. G., and Borning, A. (2017). A survey of value sensitive design methods. *Foundations and Trends in Human-Computer Interaction*, *11* (23), 63-125. [Please read introduction, pp. 64 – 71; Please browse the remainder]

Cheng, K. (2013). How to survive a critique: A guide to giving and receiving feedback . *AIGA*. Retrieved January 1, 2014 from http://www.aiga.org/how-to-survive-a-critique/ (Links to an external site.)

Studio

In studio we will pursue a simplified value sensitive design process. We'll learn the basics for the following methods:

- Direct and indirect stakeholder analysis
- Value source analysis
- Co-evolution of technology and social structure
- Value scenarios.

We will apply these methods to a pressing problem related to smart homes and the Internet of Things.

Mini-Project Design Brief

Hendry, D.G. (2019). *Internet of Things: Gaslighting and the Smart Home*. UW Tech Policy Educational Case Study. UW Tech Policy Lab. University of Washington.

Barnard-Wills, D., Marinos, L., & Portesi, S. (2014). *Threat Landscape and Good Practice Guide for Smart Home and Converged Media*. European Union Agency for Network and Information Society. ISBN: 978-92-9204-096-3, doi: 10.2824/33134

Week 2 (Apr 8-14): Introduction to value sensitive design

Lecture and discussion

In this seminar we will consider the nature of design, as a broad form of inquiry, and will then consider user-centered design and its relationship to value sensitive design. Specifically, we will introduce value sensitive design, covering some of its theoretical commitments and some of its methods. We'll answer the question: What is the difference between method and methodology?

Readings

Berry, W. (1987). Preserving wildness. *Home Economics* (pp. 137-151). New York: North Point Press.

Fischer, G. (2017). Exploring design trade-offs for quality of life in human-centered design . *Interactions*, *25* (1), 26-33.

Bannon, L. (2011). Reimagining HCI: Toward a more human-centered perspective. *Interactions*, *18* (4), 50-57.

Studio

In studio we will complete the simplified value sensitive design process and develop experience with concept maps for representing stakeholders and values.

PART II: FOUNDATIONS IN THEORY AND METHOD

Week 3 (Apr 15-21): Technology and Human Experience

Lecture and discussion

In this seminar we will take up the question: Can values be embedded in technology? We'll consider technological and social determinism and the interactional stance, and we will explore the co-evolution of technical and social structure

Readings

Grudin, J. (2006). The demon in the basement. *Interactions*, Nov/Dec, 50-53.

Kranzberg, M. (1986). Kranzberg's laws. *Technology and Culture*, *27*, 544-560.

Orlikowski, W. J. (2000). Using technology and constituting structures: A practice lens for studying technology in organizations. *Organization Science*, *11*(4), 404-428.

Optional Readings

Flanagan, M., & Nissenbaum, H. (2007). A game design methodology to incorporate social activist themes. *Proceedings of CHI 2007* (pp. 181-190). New York: ACM Press.

Star, S. L. and Ruhleder, K. (1996). Steps toward an ecology of infrastructure: Design and access for large information spaces. *Information Systems Research*, *7*(1), 111-134.

Latour, B. (1992). Where are the missing masses? The sociology of a few mundane artifacts. In W. E. Bijker and J. Law (Eds.), *Shaping technology/building society: Studies in sociotechnical change* (pp. 225 –258). Cambridge, MA: The MIT Press.

Star, S., & Bowker, G. (2010). How to infrastructure. In L. Lievrouw, & S. Livingstone (Eds.), *Handbook of new media: Social shaping and social consequences of ICTs, Updated student edition*. (pp. 230-246). London: SAGE Publications Ltd.

Studio

In this studio, we will begin to work on the next design mini-project and leave some time aside for finishing up work on first design mini-project.

Mini-Design Project

Hendry, D.G. (2019). Value Sensitive Design: Prototyping and Values. The Information School, University of Washington.

Sustein, C. R. & Thaler, R. H. (2003). Libertarian paternalism is not an oxymoron. *The University of Chicago Law Review, 70* (4), 1159-1202.

Week 4 (Apr 22-28): Value Sensitive Design: Overview of Method

Lecture and Discussion

Selecting and employing methods • Conceptual, empirical, and technical investigations

Readings

Friedman, B., Hendry, D. G., and Borning, A. (2017). A survey of value sensitive design methods . *Foundations and Trends in Human-Computer Interaction*, *11* (23), 63-125. [Please read sections 2 and 3, pp. 72 – 101]

*Friedman, B., & Hendry, D. (2012). The envisioning cards: a toolkit for catalyzing humanistic and technical imaginations. *Proceedings of the 2012 ACM annual conference on Human Factors in Computing Systems (CHI '12)* (pp.1145-1148). New York: ACM Press.

Friedman, B., Howe, D. C., & Felten, E. (2002). Informed consent in the Mozilla browser: implementing value-sensitive design. In *Proceedings of the 35th Annual Hawaii International Conference on System Sciences*, 2002.

Studio

Work on design mini project #2. Group presentations.

Reading on semi-structured interviews.

Week 5 (Apr 29-May 5): Envisioning

Lecture and Discussion

This week we will explore several different approaches for envisioning.

Readings

Nathan, L. P., Friedman, B., Klasnja, P., Kane, S. K., & Miller, J. K. (2008). Envisioning systemic effects on persons and society throughout interactive system design. In *Proceedings of the Seventh ACM Conference on Designing Interactive Systems* (pp. 1–10). New York, NY: ACM.

Woelfer, J. P., Iverson, A., Hendry, D. G., Friedman, B., & Gill, B. T. (2011). Improving the safety of homeless young people with mobile phones: Values, form and function. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (pp. 1707–1716). New York, NY: ACM.

*Kensing, F., & Madsen, K. H. (1991). Generating visions: Future workshops and metaphorical design. In J. Greenbaum and M. Kyng (Eds.), *Design at work: Cooperative design of Computer Systems* (pp. 155 - 168). Hillsdale, NJ: Lawrence Erlbaum.

Optional

Visser, F. S., Stappers, P. J., Lugt, R. van der, & Sanders, E. B.-N. (2005). Contextmapping: experiences from practice. *CoDesign*, *1*(2), 119–149.

Studio

During studio we will continue with the design mini-project #2, giving brief presentations on process and solution directions.

Week 6 (May 6-12): Co-Design and Value Tensions

Lecture and Discussion

Presentation on *Diverse Voices* - a method for including under represented voice in tech policy development.

Readings

Young, M., Magassa, L., & Friedman, B. (2018). Toward inclusive tech policy design: a method for underrepresented voices to strengthen tech policy documents. *Ethics and Information Technology*, 1-15.

Optional Readings

Nussbaum, M. (2000). The Costs of Tragedy: Some Moral Limits of Cost-Benefit Analysis. *The Journal of Legal Studies*, *29*, 1005–1036.

Lim, Y.-K., Stolterman, E., & Tenenberg, J. (2008). The Anatomy of Prototypes: Prototypes As Filters, Prototypes As Manifestations of Design Ideas . *ACM Trans. Computer-Human Interaction*, *15*(2), 7:1–7:27.

Studio

Project questions and provide guidance on finishing your projects.

PART III: EXTENSIONS

Week 7 (May 13-19): Value Focus – student choice

Lecture and Discussion

We'll consider privacy. The *New York Times* has an interesting series of articles called the Privacy Project, found here:

The Privacy Project. (n.d.). *The New York Times*. https://www.nytimes.com/series/new-york-times-privacy-project

Please browse the articles in the Privacy Project, and then read these two articles carefully:

Irby, S. (2019/April 10). I don't care. I love my phone. *New York Times*. https://www.nytimes.com/2019/04/10/opinion/iphone-privacy.html

Madden, M. (2019/April 25). The devastating consequences of being poor in the digital age. The New York Times. https://www.nytimes.com/2019/04/25/opinion/privacy-poverty.html

Consider the values at stake. What are they and do these values come to the foreground through technologies? How can value sensitive design be used to clarify these socio-technical contexts? Please come to class ready to discuss!

Studio

Design mini-project studio. You will present on your project vision, ask and take questions, and iterate on your project.

Week 8 (May 20-26): Technology Focus – student choice

Lecture and Discussion

What technologies would you like to take up this week?

Readings

To be decided.

Studio

Project preparation.

Week 9 (May 27-Jun 2): Tech Policy

Lecture and Discussion

What is policy? How can policy shape technology and technology develop?

Readings

Jeroen van den Hoven (2013). Value sensitive design and responsible innovation. In *Responsible Innovation* (pp. 75–83). John Wiley & Sons, Ltd, 2013.

Weizenbaum, J. (1972). On the impact of the computer on society. *Science*, *176* (4035), 609–614.

Crawford, K., and Calo, R. (2016). There is a blind sport in AI research. *Nature*, *538* (7625), 311–313.

Optional Reading

Wallach, W. (2015). *A Dangerous Master: How to Keep Technology from Slipping Beyond Our Control*. New York: Basic Books.

Studio

Project preparation.

Week 10 (Jun 3-9): Summary and Next steps

Lecture and Discussion

This week, we'll sum things up and consider the next steps for applying and developing value sensitive design.

Readings

Berry, W. (1987). Preserving wildness. *Home Economics* (pp. 137-151). New York: North Point Press.

Borning, A., & Muller, M. (2012). Next steps for value sensitive design. *Proceedings of CHI 2012* (pp. 1125-1134). New York: ACM Press.

The IEEE Global Initiative on Ethics of Autonomous and Intelligent Systems (2019). *Ethically Aligned Design: A Vision for Prioritizing Human Well-being with Autonomous and Intelligent Systems*, First Edition. IEEE, 2019. https://standards.ieee.org/content/ieee-standards/en/industry-connections/ec/autonomous-systems.html

Studio

Design expo and project posters.