

Digital Ethics and Data Privacy

Course Introduction

Course Instructor



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- Office: COM2-04-19
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- o Interests:
 - ✓ Digital Ethics
 - ✓ Digital Product Management
 - ✓ Digital Ecosystems and Platforms
 - ✓ Digital Experience Platforms
 - ✓ Digital Economy
- Thirty years of IT consulting experience in expert systems and software development, system integration, and product management
- Worked in Accenture, Sun Microsystems, HP, EDS, DEC, and NEC





Course Objective



 To introduce students to the issues of digital ethics and data privacy faced by individuals and organizations.

Course Learning Outcomes



Upon completion of the course, students will be able to:

1. Evaluate ethical considerations and manage risks around designing and building *digital* and *AI-driven* products and services with *professional*, *social*, *environmental*, and *personal responsibility*.

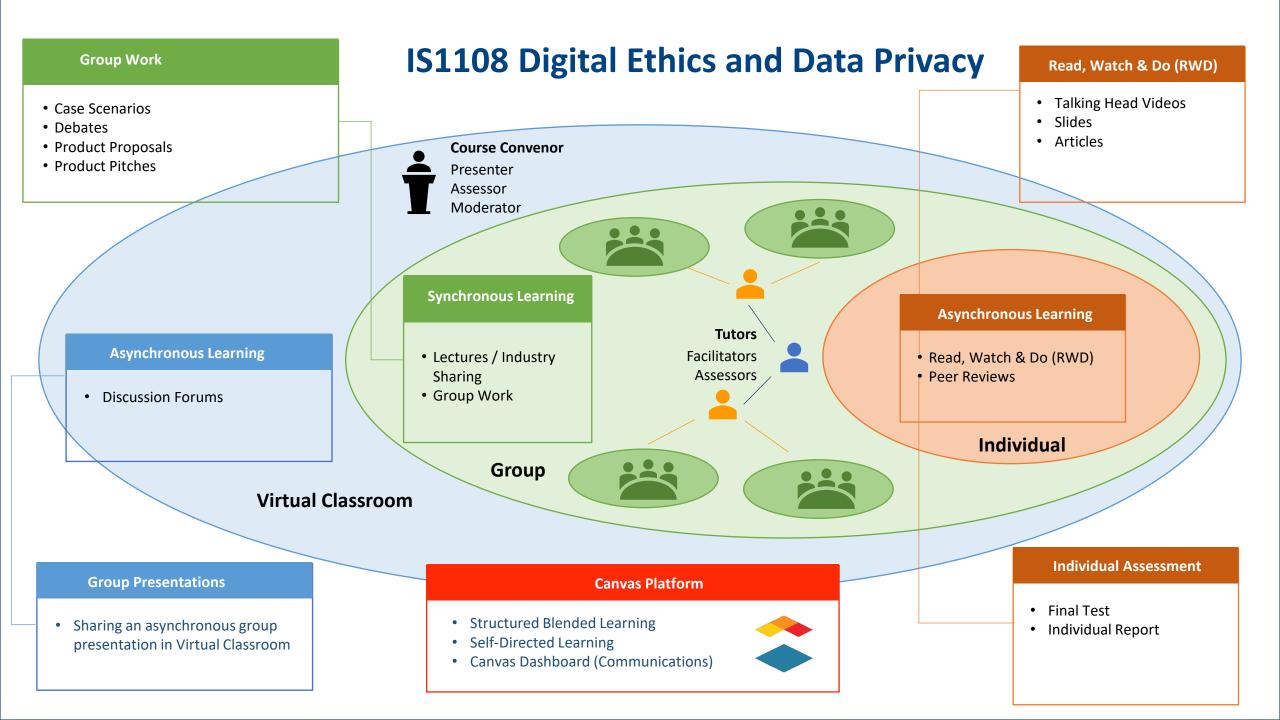


2. Acquire the knowledge and skills to critically *navigate*, *evaluate* and *debate ethical issues* in AI, with a focus on human safety, fairness, data privacy, governance frameworks, and the integration of ethical principles into digital systems.



3. Critique and formulate a *balanced* view of the value and impact of AI and digital technologies by asking questions about ethics, *weighing* various data and technology initiatives and options, and *defending* the use of these digital technologies.





Lesson Plan



	Week	Lectures	Read, Do, Watch (RWD) (Self- Regulated)	Tutorials	Assignment Due
13-17 Jan	1	Course Introduction and Administration			
20-24 Jan	2	Project: Building Ethical Products	Topic 1: Professional Ethics		
27-31 Jan	3	No lecture (Chinese New Year)	Topic 2: AI Ethics and Governance	No classes (Chinese New Year)	Develop Product Proposal
3 -7 Feb	4	Project: Sustainable Business Model Canvas	Topic 3: Automation and Autonomous Systems	Case Scenario 0: Community Services	Product Proposal Submission
10-14 Feb	5	Topic 4: Data Protection and Privacy	Topic 5: Ethics By Design	Case Scenario 1: Automated Essay Scoring	Case Scenario 1: Automated Essay Scoring
17-21 Feb	6	Digital Assessment Briefing	Topic 6: Human Computer Interaction Design	Case Scenario 2: Death Predictor	Case Scenario 2: Death Predictor
24-28 Feb		Recess Week			
3 - 8 Mar	7	Topic 7: Digital Divide, Equity, Accessibility and Inclusion	Topic 9: Digital Intellectual Property Rights	Project: Product Pitch Preparation	
10-14 Mar	8	Topic 8: Computing for Social Good		Case Scenario 3: Olympic Games	Case Scenario 3: Olympic Games
17-21 Mar	9	Prepare for Debate and Product Pitch	Industry Practitioner Sharing	Team Consultation	
24-28 Mar	10	Prepare for Final Test		Team Consultation	Debate Slides Submission
31 Mar-4 Apr	11	Test		Debate	Product Pitch Deck Submission
7-11 Apr	12	Prepare Individual Report		Product Pitch	Peer Review Submission
14-18 Apr	13	No classes (Deepavali/NUS Well-Being Day)			Individual Report Submission

Assessment Components



#	Component	%
1	Class Participation	8%
2	Group Project (Pitch)	32%
3	Debate	10%
4	Individual Assignment (Report)	30%
5	Final Test	20%
	Total	100%

Digital Ethics and Data Privacy







Group Collaborative Learning Agreement

"What makes for successful collaboration?"

"What are common team challenges during group collaboration?"

Group Discussions



- You are grouped into teams to collaborate on ethical issues described in the case scenarios.
- Make full use of the FISh model to Focus, Investigate and Share your insights.
- A FISh model template based on Miro Board is provided for your group discussion work.
- Post your group work to Canvas Discussion Forum.



Simplified FISh Model

Step 2: Investigate

Gather the Facts

Apply Codes of Ethics

Evaluate Possible Solutions

Act and Justify

Review and Reflect



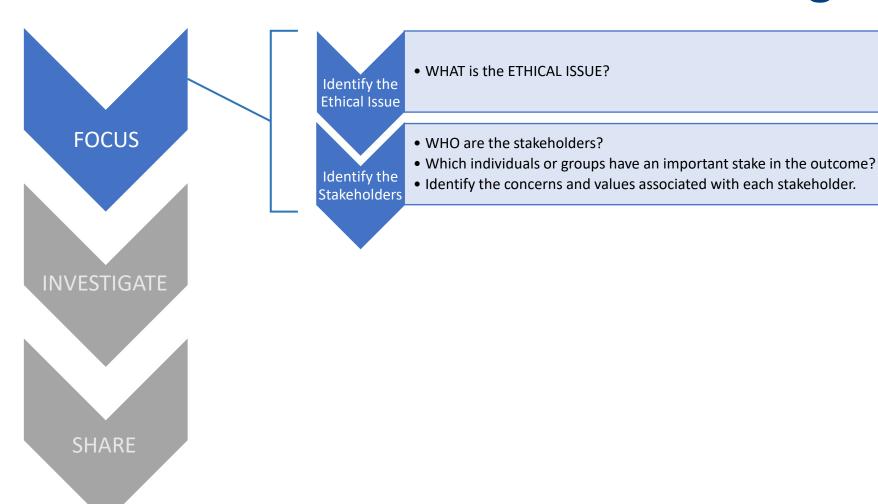
Step 3: Share
Share and Discuss

Step 1: Focus

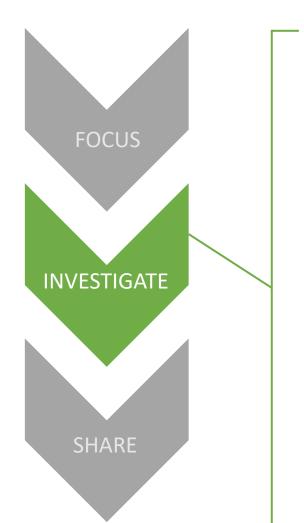
Identify the Ethical Issue Identify the Stakeholders

Nerantzi & Uhlin, 2012









Gather the Facts

- KNOWN: What are the FACTS? WHERE to go for ANSWERS to your QUESTIONS?
- UNKNOWN: What additional facts, information, or evidence would be USEFUL?

Apply Codes of Ethics

- What does our Code of Ethics and Professional Conduct say about this situation?
- Is there any research or literature to inform and support you?

Evaluate Possible Solutions

- Generate and reflect on at least 3 alternative courses of action. Consider the strengths and limitations of each action.
- What is the motivation of each course of action? To produce the most good? To do the right thing? To develop one's character?

Act and Justify

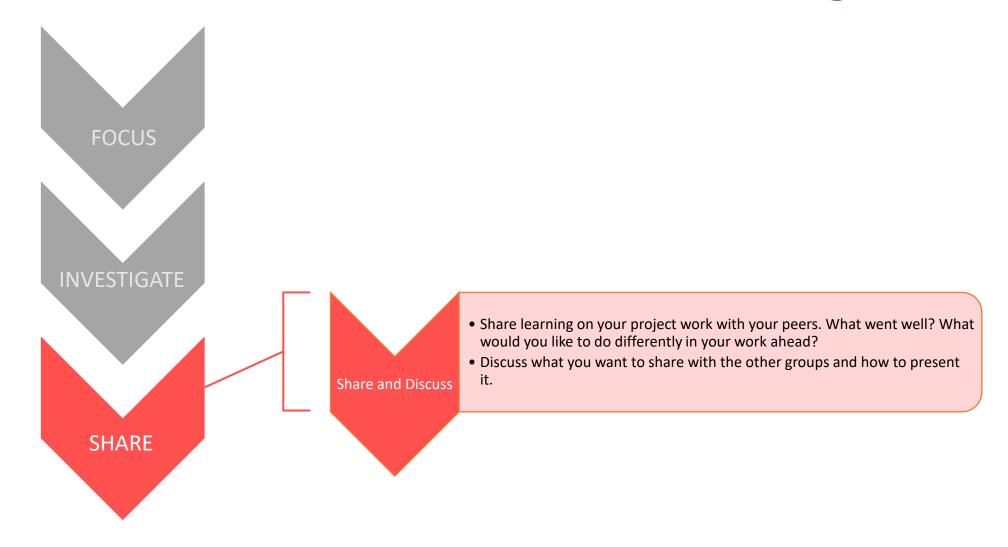
- What is your decision?
- Justify your decision.

Review and Reflect

- After implementing your decision, you can evaluate it afterwards.
- Was the decision fair and just? What did I learn from the situation?

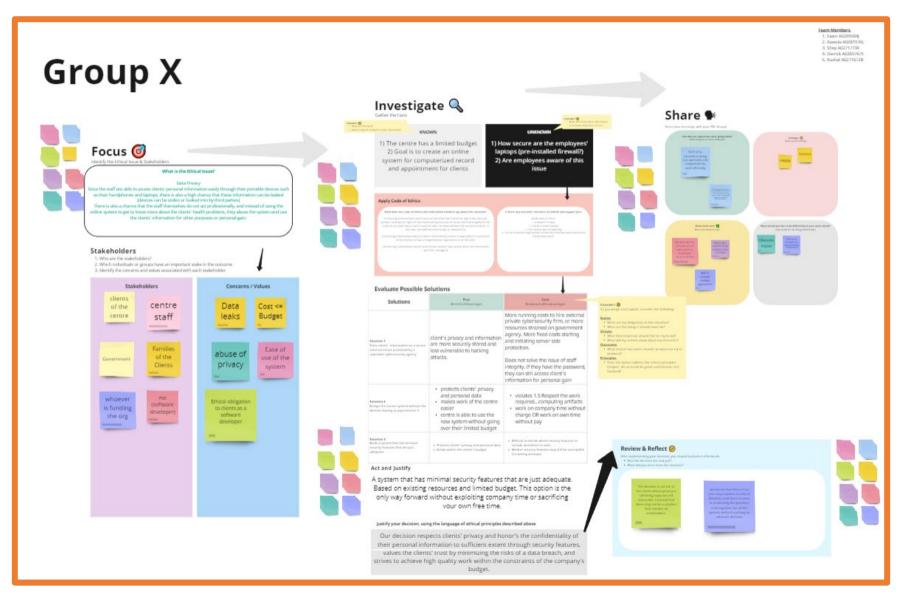
Adapted from the Framework in Spring 2017 issue of Pharmacy Connection





Group Work: Miro





Class Participation (8%)



- Case Scenario 0: Community Services
- Case Scenario 1: Automated Essay Scoring
- Case Scenario 2: Death Predictor
- Case Scenario 3: Olympic Games
- Product Pitch Preparation



Product Pitch (32%)



- Objective: To foster a thorough understanding of AI and digital ethics, and to apply this understanding in a practical manner.
- In your Group, you will work as a Product Team to submit a
 Proposal for a digital product to design and manage from inception
 to launch. You are required to incorporate ethical considerations
 into digital products.
- The final output will be a Product Pitch.



Group Debate (10%)



- Each of the teams in a tutorial group will debate on a given ethical issues in a sequential manner.
- The teams will present their stance on the ethical issues, followed by a brief Q&A with the other teams.
- Each team must submit a set of Powerpoint slides for their presentation for the debate.

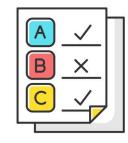


Test (20%)



- Test 20% (MCQ and MRQ)
- Digital Assessment Using ExamSoft Examplify





Multiple Choice Questions

Multiple Response Questions

Individual Assignment (Report) (30%)



- All students will be assigned to write and submit a report based on a Case Study Scenario.
- Students are required to research the digital ethics issues around the assigned case study scenario and submit an Individual Report for it.
- Students should make full use of the FISh model to Focus, Investigate and Share their insights in the report.





Group Project Assessment Criteria



Product Proposal	Product Pitch
Teams propose an ethical digital product idea, outlining its value proposition, key features, and ethical considerations.	Teams present their product idea in a formal pitch, focusing on ethical considerations, market need, and impact.
Clarity of Idea	Product Overview Clarity
Identification of Ethical Issues	Value Proposition Articulation
Value Proposition	Sustainable Business Model Presentation
Societal and Environment Relevance	Ethical Considerations Integration

Debate Assessment Criteria



Team Debate

Students will participate in a structured debate on a contemporary ethical issue related to digital ethics or data privacy.

Content Quality: Depth of research, relevance of examples, and alignment with the debate topic.

Clarity and Organization: Logical structure, concise messaging, and effective visual presentation.

Ethical Relevance: Incorporation of ethical principles and real-world implications.

Presentation Readiness: Overall professionalism and adherence to submission guidelines.

Individual Report Assessment Criteria



Individual Report

Depth of analysis, application of the FISh model (Facts, Issues, Solutions), critical thinking, and clarity of presentation.

- Application of the FISh Model
- Depth of Research and Evidence
- Critical Thinking and Ethical Analysis
 - Organization and Clarity
 - Creativity and Originality



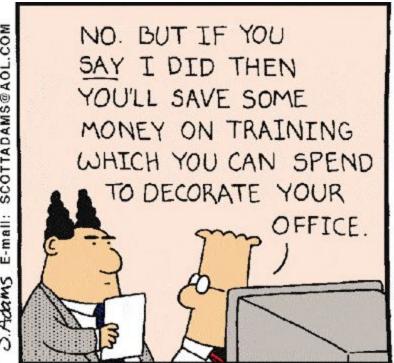
Digital Ethics and Data Privacy

Introduction

Is Digital Ethics Common Sense?



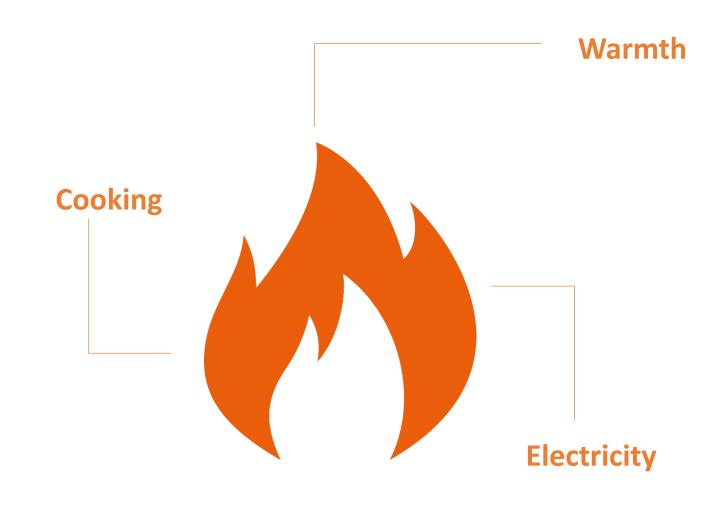






Gift of Fire







Definitions



 Gartner's Definition: The systems of values and moral principles for the conduct of electronic interactions among people, organizations and things.

Responsible Automation



Responsibility toward employees in the face of automation

Responsible Products and Services

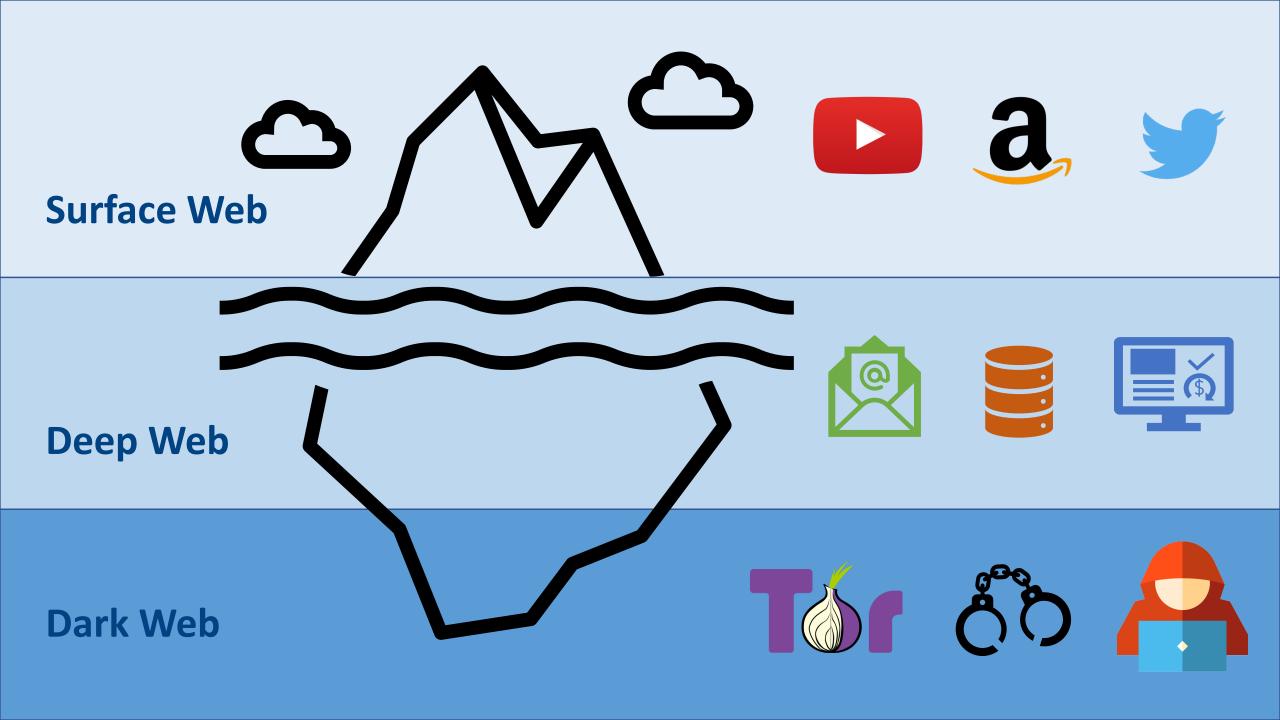


Risk management, product management, corporate citizenship

Responsible Data Usage



Ethical data usage in an era of digital technology and regulation



New Technologies, New Risks



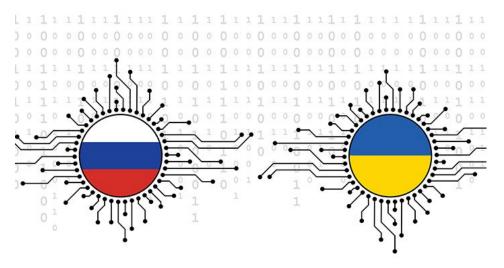
 Every new technology carries with it an opportunity to invent a new crime.



2017

NotPetya:

the cyberattack that shook the world



2022

State-sponsored cyber warfare

Privacy Invasion



- Problem one stems from the fact that these companies have built their business model on using personal and private user information to make their fortunes.
- Problem two is they are not open and honest with their users about using their personal and private information.
- Problem three is they offer no alternatives. No solution to the user who wants to protect their privacy.







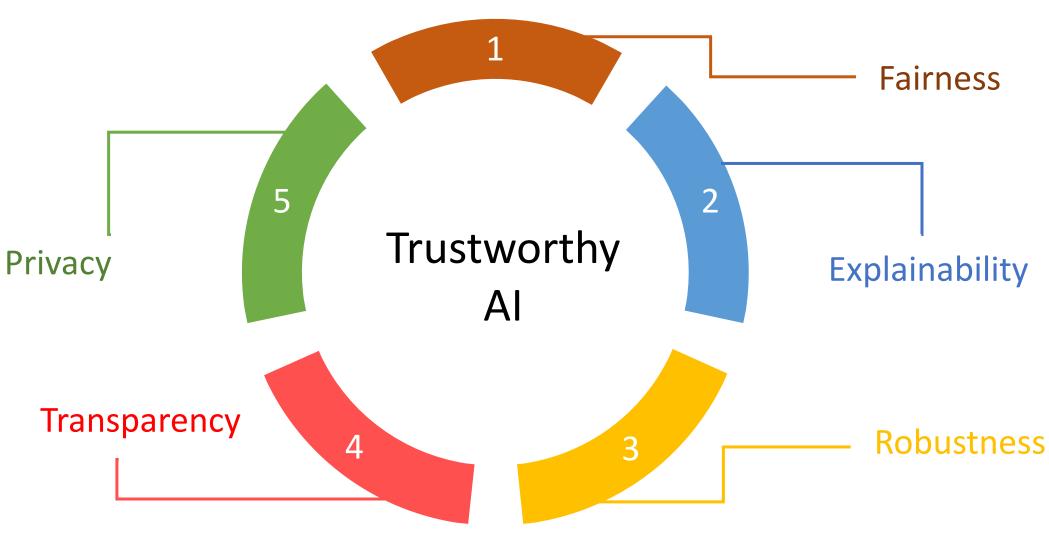




Source: https://www.computerworld.com/article/3290378/lawmakers-investigate-how-ai-in-apple-google-invade-privacy.html

Five Pillars of Trustworthy Al





Source https://www.ibm.com/artificial-intelligence/ethics

Problems vs Dilemmas



"A problem is something that can be solved. A dilemma is something that can only be navigated."

Margaret Stewart, VP, Product Design, Facebook

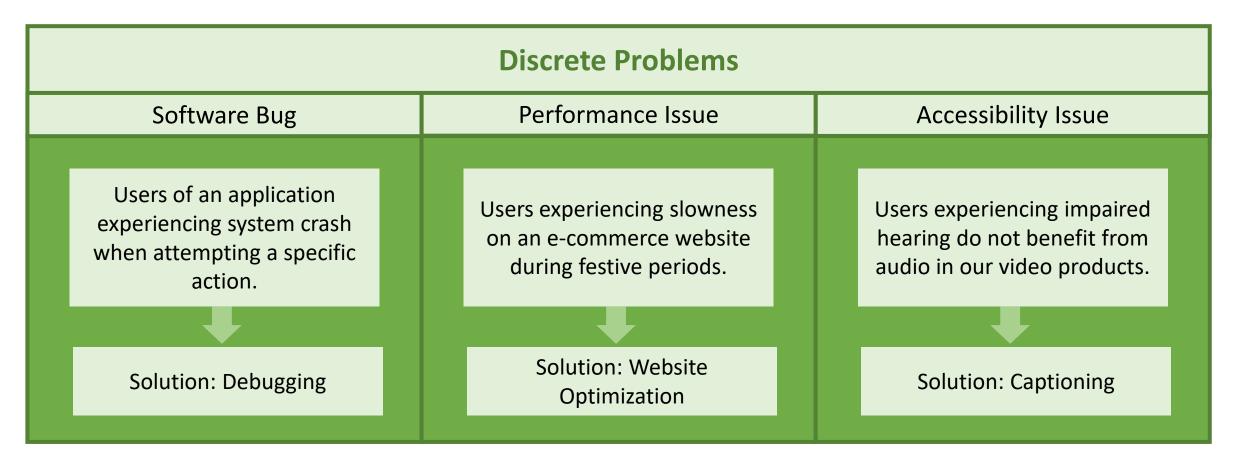
Dilemmas may not have clear-cut Problems have answers and require definitive solutions careful navigation to manage conflicting interests or values

Examples of Problems



"A problem is something that can be solved. A dilemma is something that can only be navigated."

Margaret Stewart, VP, Product Design, Facebook



Dilemma #1



People's sense of agency and economic security in tension with safety

Instagram introduced a new product that enables Black-owned businesses with an Instagram Shop to self-designate and share a "Black-owned" label on profile / product pages.

Pros:
Supports the
Black Lives
Matter
movement
and closes
gaps in
economic
opportunity

Cons:
Harassment
and hate
speech and
other
potential
hurtful
interactions



Counteraction:
Responsible
Innovation Team
conducted indepth research
and consulted
experts and took
proactive
mitigation actions.



Mitigations:

- 1. Enhancing Moderation
- 2. Promoting Positive Discourse
- 3. Improving Reporting Mechanisms
- 4. Implementing Safety Measures

Dilemma #2



Giving people a voice and access to information in tension with safety and civic integrity

During critical times, such as elections or health crises such as the COVID-19 pandemic, WhatsApp can play an important role in giving people a voice and helping them share information.

Pros: Sharing of information and experiences in aid of public health efforts.

Spread of harmful misinformation that could negatively impact public

Cons:

health efforts.

Mitigations:

- 1. Limiting the number of times someone can forward a message at once
- 2. Partnering with health organizations like the World Health Organization (WHO) to flag and remove misinformation,
- 3. Promoting verified information through a COVID-19 Information Center
- 4. Redirecting any search on COVID-19 to reliable health sources

Dilemma #3



Protecting people's privacy in tension with ensuring their safety and well-being

Facebook employs algorithms that scan user posts for signs of self-harm or suicide, get an indication, through community reporting or artificial intelligence (AI), that someone may be struggling.

Pros:

Facebook can alert local authorities to conduct a wellness check.

Cons:

Infringes on users'
privacy, as the
algorithms essentially
'read' user posts, and
the decision to
involve authorities
can be viewed as an
overreach.



Mitigations:

- 1. Working with leading suicide prevention experts to inform mitigation approach
- 2. Updating suicide prevention tools and policies
- 3. Offer to connect to friends, mental health services, or crisis support lines
- 4. Offering more resources to users posting concerning content
- 5. Increasing the transparency of its procedures

Further Reading



1. Ethics of Automation and Robotics: Top Challenges and Solutions

https://www.b2eautomation.com/insights/ethics-of-automation-and-robotics-top-challenges-and-solutions

2. Beyond good intentions

https://www2.deloitte.com/us/en/insights/industry/technology/ethical-dilemmas-in-technology.html

3. The Ethics of Tech: Addressing Ethical Dilemmas in the Digital Age

https://www.linkedin.com/pulse/ethics-tech-addressing-ethical-dilemmas-6tocf/

4. The Ethical Dilemmas of Data Analytics in a Digital World

https://iabac.org/blog/the-ethical-dilemmas-of-data-analytics-in-a-digital-world

5. METAVERSE ETHICS: ADDRESSING THE MORAL DILEMMAS OF A DIGITAL SOCIETY

https://medium.com/@worldatmetateam/metaverse-ethics-addressing-the-moral-dilemmas-of-a-digital-society-7840f72473e

6. Elements of Digital Ethics

Digital Ethics and Data Privacy

The Elements of Digital Ethics (axbom.com)

7. A Framework for Ethical Decision-Making

https://pharmacyconnection.ca/framework-decision-making-winter-2019/



School of Computing