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The Ethics4EU Project

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The Ethics4EU Project

- Ethics4EU is an Erasmus+ transnational project that will explore issues around teaching ethics in Computer Science
- Ethics4EU will develop new curricula, best practices and learning resources for ethics for computer science students
- It follows a ‘train the trainer’ model for up-skilling computer science lecturers across Europe

Partners

Technological University Dublin, Ireland

Informatics Europe, Switzerland

Institut Mines-Telecom/Telecom SudParis, France

Mälardalens Högskola, Sweden

European Digital Learning Network, Italy

Teaching Ethics to Computer Science students

- Despite the many ways new technologies have improved life, they cannot be regarded as unambiguously beneficial or even value-neutral

- Recent experience shows they can lead to unintended but harmful consequences

- We want to educate our students to think not only about what systems they could build, but whether they should build those systems

  • What are the intended and unintended consequences of this product or feature?
  • What are the positive consequences we want to focus on?
  • What are the consequences we want to mitigate?

Ethics4EU Objectives

- To identify gaps in computer science lecturers' knowledge of ethics
- To develop a common understanding of pan-European values in ethics for technology
- To develop a repository of open and accessible online curricula, teaching and assessment resources to support teaching ethics to computer science students
- To produce practical guidelines and instructor guides for teaching ethics to computer science students
- To develop a sustainable European Community of Practice in computer science ethics
- To develop an online training programme through the HubLinked Global Labs model for computer science lecturers in the instruction of ethics

Intellectual Output 1 - Completed

- Research Report on European Values for Ethics in Technology

    1. A literature review on pertinent computing ethics concerns and challenges for an increasingly interconnected ICT world
    2. Results of focus groups conducted with three key groups of stakeholders – academics, industry specialists, and citizens –capturing concerns with regards to ethics and ICT

- The report contains a number of values (extracted from both literature and sessions with stakeholders) that can be used as guidelines by Computer Science lecturers and educators in the development and delivery of ethics content

- Download the report from the Ethics4EU website: http://ethics4eu.eu/european-values-for-ethics-in-technology-research-report/

Intellectual Output 2 - Completed

- Research Report on Existing Competencies in the Teaching of Ethics in Computer Science

  Results of a survey of over 60 European institutions
  - Whether or not ethics is taught on Computer Science (or related programmes) at each institution?
  - The reasons why ethics is or is not taught?
  - How ethics is taught?
  - The background of staff who teach ethics
  - The scope of Computer Science ethics curricula

- Download the report from the Ethics4EU website: http://ethics4eu.eu/outcomes/existing-competencies-in-the-teaching-of-ethics-in-computer-science-faculties-research-report/

Intellectual Output 3 – In Progress

- A repository of open and accessible online curricula, teaching and assessment resources to support teaching ethics to computer science students

- We are developing a set of teaching materials centered on case studies:
  - Delivery notes
  - Set of lecture slides
  - Sample assessments
  - In-class activities
  - Take home activities
  - Research papers
  - Related materials and case studies

Case Studies for Teaching Ethics

- Research in other fields has shown that using case-based instruction increases student understanding of ethical issues and helps development of moral reasoning skills

- The use of cases to teach Computer Science ethics provides students with an opportunity recognize dilemmas and to employ moral imagination by promoting active learning and often requiring them to assume the role of participants in the decision making process

- We are creating a series of case studies concerning the ethical impacts of socio technical systems

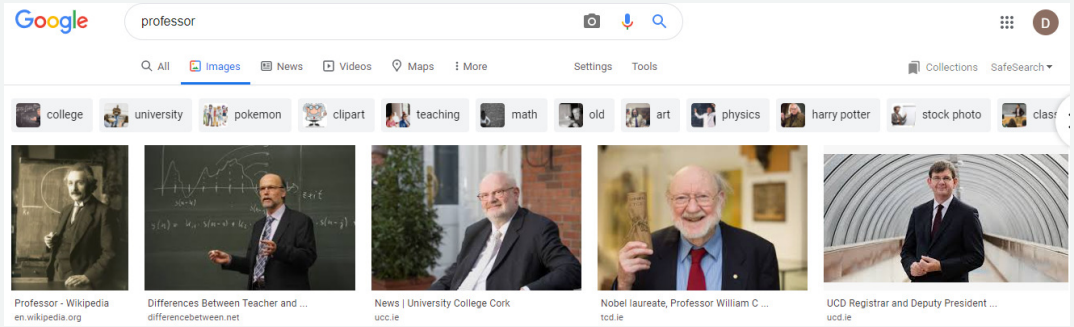
Case Studies

- ***Computer Programming***
  Irish State Examinations 2020,
  Google Autocompletes
  Google Search Bias

- ***Software testing***
  Volkswagen Emissions Scandal

- ***Social Media Ethics***
  Cyberharrasment

- ***Internet of Things***
  E-/Smart Pills

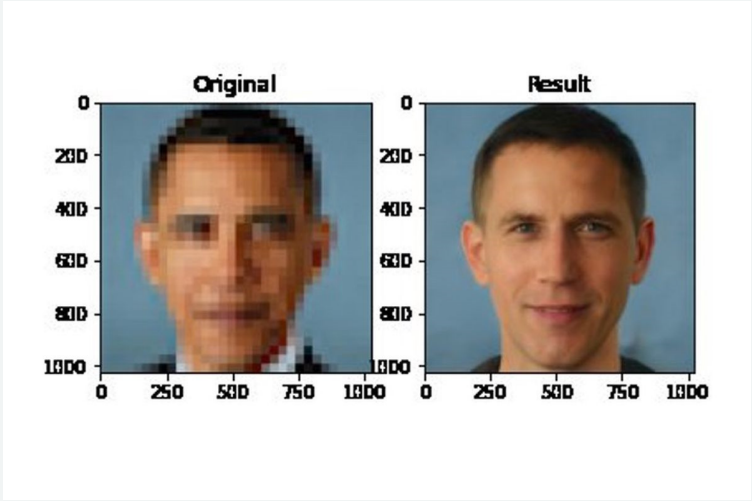


Case Studies

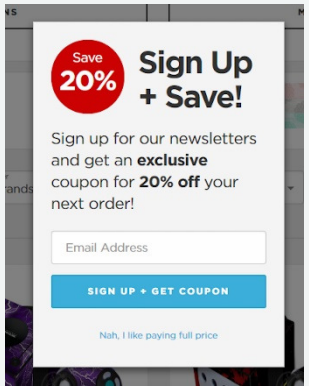
- ***AI and Machine Learning***
  Autonomous Vehicles
  Online exam proctoring
  PULSE algorithm
  Covid19 Tracking Apps

- ***Technopolitics and the Global South***
  Provenance of data used to build digital products and services

- ***Human Computer Interaction***
  Dark Patterns



Ethics 4EU



Case Study Development

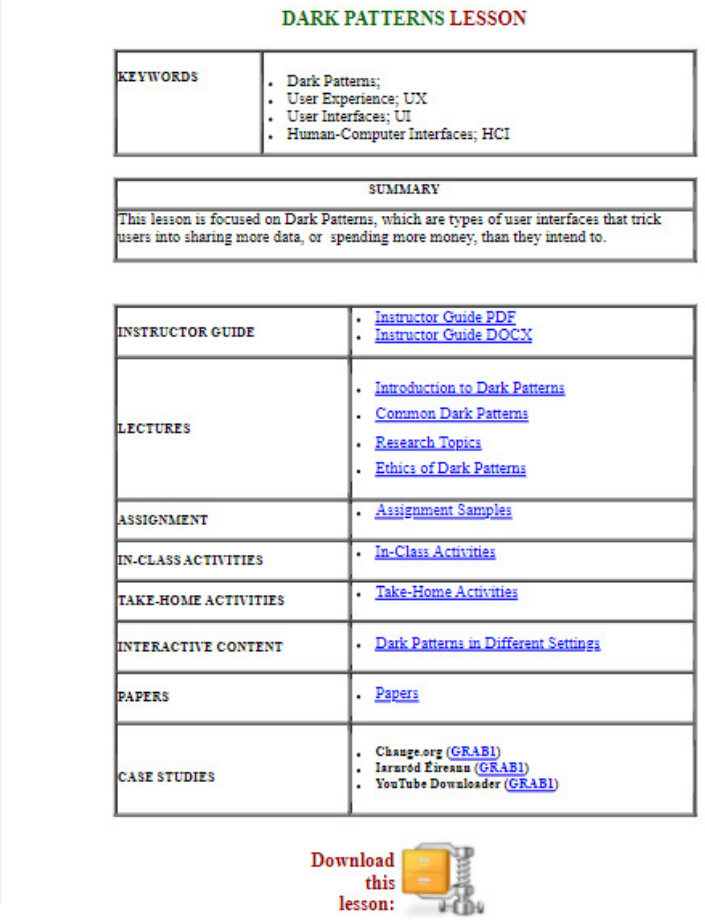
- Each case study is developed by a research team of at least 2 partners from Ethics4EU team
- Each research team composes of at least one Ethicist and one Computer Scientist
- We use an iterative approach to development, refining after evaluating materials with other team members, faculty and with students

Case Study Evaluation

- We have developed an evaluation framework for evaluating the case studies focused on:
  - Content evaluation inspired by LORI (Learning Object Review Instrument)
  - Usability evaluation inspired by TAM (Technology Acceptance Model)
  - Expert interviews
  - Lecturer reflection on delivering the content
  - Student feedback after content delivery

Accessing the Case Studies

- Each case study and its associated materials will be available from an open online repository



DARK PATTERNS LESSON

KEYWORDS	• Dark Patterns; • User Experience; UX • User Interfaces; UI • Human-Computer Interfaces; HCI

SUMMARY
This lesson is focused on Dark Patterns, which are types of user interfaces that trick users into sharing more data, or spending more money, than they intend to.

INSTRUCTOR GUIDE	• Instructor Guide PDF • Instructor Guide DOCX
LECTURES	• Introduction to Dark Patterns • Common Dark Patterns • Research Topics • Ethics of Dark Patterns
ASSIGNMENT	• Assignment Samples
IN-CLASS ACTIVITIES	• In-Class Activities
TAKE-HOME ACTIVITIES	• Take-Home Activities
INTERACTIVE CONTENT	• Dark Patterns in Different Settings
PAPERS	• Papers
CASE STUDIES	• Change.org (GRAB1) • Iarnród Éireann (GRAB1) • YouTube Downloader (GRAB1)

Download this lesson:

Intellectual Output 4 – In Progress

- Practical guidelines and instructor guides for the teaching of computer science ethics

- Guidance on mechanisms to raise ethical and moral questions, how to give students the opportunity to formulate answers, and how to train students in justifying and explaining their answers using reasoning

Intellectual Output 5 – Planned

- A sustainable European Community of Practice in computer science ethics
- Virtual community of practice to allow lectures to collaborate as they discuss, share and develop their knowledge and experiences in delivering computer science ethics courses
- Shared repertoire of resources, experiences, stories, tools, and ways of addressing recurring problems
- Establishment of a Informatics Europe workgroup to evaluate the resources

Intellectual Output 6 – Planned

- An training programme through the HubLinked Global Labs model for computer science lecturers
  - Online distance learning model
  - Blended learning model
  - Modular CPD model

In Summary

- Existing and emerging technologies are posing increasing difficult ethical dilemmas

- The overarching aims of the Ethics4EU project are to:
  - Design and develop curricula that can integrate the teaching of computational methods with ethical reasoning skills
  - Provide students with experience in identifying, confronting, and working through ethical questions across many topics in Computer Science
  - Equip graduates to produce beneficial and socially responsible computer technology

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