Seminar series with a focus on pedagogical development in innovation, design, and engineering. Organized by: Angelina Sundström Kärneus, Elisabeth Uhlemann, Kristina von Hausswolff and Sara Ekstrand

2024-10-18 13:30-14:30

RESEARCH-BASED PERSPECTIVE IN TEACHING ETHICS

Gordana Dodig-Crnkovic
Professor in Computer Science at Mälardalen University and
Professor of Interaction Design at Chalmers University of Technology

Web pages:
http://gordana.se/ Personal
http://www.gordana.se/work/presentations.html
http://www.gordana.se/work/courses.html

Chalmers University of Technology
https://www.chalmers.se/en/persons/dodig/

Mälardalen University
http://www.es.mdh.se/staff/37-Gordana_Dodig_Crnkovic

This is a lecture I had on several occasions before,
for diverse audiences.

Research-based Teaching Ethics to Engineering Students
- Digital Humanism Perspective

Vienna University of Technology, 2023 05 04

Gordana Dodig-Crnkovic
Professor in Computer Science at Mälardalen University and
Professor of Interaction Design at Chalmers University of Technology

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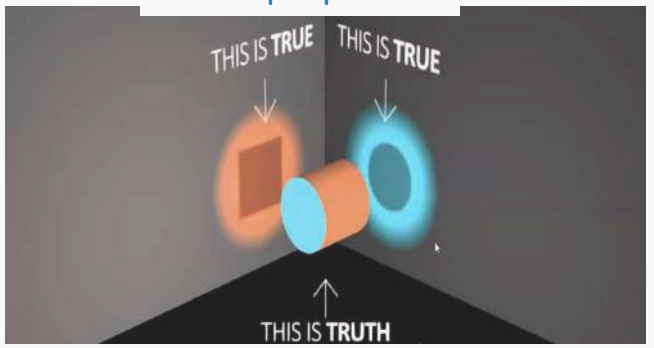
Chalmers University of Technology
https://www.chalmers.se/en/staff/Pages/gordana-dodig-crnkovic.aspx

Mälardalen University
http://www.es.mdh.se/staff/37-Gordana_Dodig_Crnkovic

Motto: Technology for people



https://medium.com/the-ascent/it-can-all-be-true-e59bacf132b8

https://informatics.tuwien.ac.at/news/2410
https://informatics.tuwien.ac.at/news/2414

Audience: colleagues and students

Beyond Compliance
European Research Consortium for Informatics and Mathematics - Forum on Digital Ethics in Research
Institut Imagine, Paris and online https://www.ercim.eu/beyond-compliance/beyond-compliance-2022 October 18, 2022

RESEARCH-BASED PERSPECTIVE IN TEACHING ETHICS

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Mälardalen University
http://www.es.mdh.se/staff/37-Gordana_Dodig_Crnkovic

ERCIM
European Research Consortium for Informatics and Mathematics

Inria

COMITÉ NATIONAL PILOTE D'ÉTHIQUE DU NUMÉRIQUE
sous l'égide du
COMITÉ CONSULTATIF NATIONAL D'ÉTHIQUE POUR LES SCIENCES DE LA VIE ET DE LA SANTÉ
French National Pilot Committee for Digital Ethics

Audience: ethics teachers, engineers, regulatory bodies

RESEARCH-BASED PERSPECTIVE IN TEACHING ETHICS TO ENGINEERING STUDENTS

IxD Seminar, Chalmers, 2022 11 29

Gordana Dodig-Crnkovic
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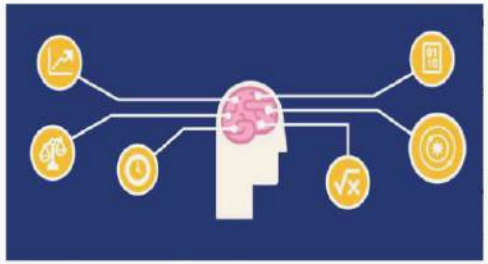
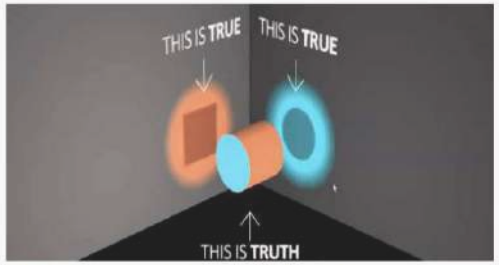
http://www.es.mdh.se/staff/37-Gordana_Dodig_Crnkovic



https://www.microsoft.com/en-us/research/project/perspectives-engine/



https://medium.com/the-ascent/it-can-all-be-true-e59bacf132b8

https://www.thehansindia.com/hans/young-hans/redefining-perspectives-725853

1

Audience: colleagues in Interaction Design

https://ascnet.ie/ethics4eu-website/teaching-ethics-to-computer-science-and-engineering-students-experiences-current-issues-and-future-challenges/ Teaching Ethics to Computer Science and Engineering Students. EXPERIENCES, CURRENT ISSUES AND FUTURE CHALLENGES, September 22, 2021

TEACHING ETHICS WITH A RESEARCH-BASED PERSPECTIVE

Gordana Dodig-Crnkovic
Professor in Computer Science at Mälardalen University and
Professor of Interaction Design at Chalmers University of Technology

Web pages:
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Chalmers University of Technology
https://www.chalmers.se/en/staff/Pages/gordana-dodig-crnkovic.aspx

Mälardalen University
http://www.es.mdh.se/staff/37-Gordana_Dodig_Crnkovic

Audience: colleagues from Informatics Europe & Ethics4EU

Background: Ethics courses and invited lectures in Ethics

For almost a quarter of a century, since 2001, I have been teaching students of Computer Science, Engineering, Interaction Design, and occasionally Economics, in the following courses:

2001-2014 "Professional ethics" at Mälardalen University (Bachelor, MSc and PhD) and

2014-2017 "Research Ethics and Sustainable Development" at Chalmers University of Technology (PhD, Chalmers).

2023 Digital Ethics and the Connected World TU Wien, Vienna University of Technology

2024 Digital Ethics and the Connected World TU Wien, Vienna University of Technology

Even other courses that I have been teaching have important parts dedicated to ethics:

"Research Methods in Natural Sciences and Engineering" (2000-2017) (PhD & MSc, MDH)

"Advanced Computational Thinking and Writing Research Toolbox" (2009-2012, MDH)

"Computational Thinking and Writing Research Toolbox" (20012-2013, MDH)

"Information - Knowledge - Science – Ethics" (in Swedish) (2013-2015, MDH)

"Emerging Trends and Critical Topics in Interaction Design" (2014-2019) (Chalmers)

"Human-centered design" (2014-2019) (BSc & MSc, Chalmers)

I have regular guest lectures in Professional Ethics, Ethics of Computing, Ethics of AI, Design Ethics, Ethics for Cognitive Scientists, Robotic Ethics and Ethics of Autonomous Cars for different classes of computer science and engineering students.

In this talk I present lessons learned, illustrated by concrete examples from my courses, sketching briefly future possibilities.

In developing my courses, I have a similar approach to the one presented by Peter Bowden who describes his research-based perspective :

"The course was based on the assumption that identifying the major ethical issues in the discipline, and subsequently presenting and analysing them in the classroom, would provide the future professional with knowledge of the ethical problems that they were likely to face on graduation. The student has then to be given the skills and knowledge to combat these concerns, should he/she wish to. (…) The sources employed to identify the issues were surveys of the literature and case studies."

Peter Bowden (2010) Teaching ethics to engineers – a research-based perspective. European Journal of Engineering Education 35(5):563-572 DOI: 10.1080/03043797.2010.497549

Teaching ethics implied joint writing with my students.

Ethics publications in collaboration with my students

- Holstein, Tobias, Dodig-Crnkovic, G., & Pelliccione, P. (2021). Steps Towards Real-world Ethics for Self-driving Cars: Beyond the Trolley Problem. In Steven John Thompson (Ed.), Machine Law, Ethics, and Morality in the Age of Artificial Intelligence. IGI Global
- Dodig-Crnkovic, G., Holstein, Tobias, & Pelliccione, P. (2021). Future Intelligent Autonomous Robots, Ethical by Design. Learning from Autonomous Cars Ethics. https://arxiv.org/abs/2107.08122
- Holstein, Tobias, Dodig-Crnkovic, G., & Pelliccione, P. (2020). Real-world Ethics for Self-Driving Cars. In Proceedings of the 42nd International Conference on Software Engineering (ICSE '20) Poster Track. https://ethics.se
- Holstein, Tobias, Dodig-Crnkovic G. (2018) Avoiding the Intrinsic Unfairness of the Trolley Problem. Avoiding the Intrinsic Unfairness of the Trolley Problem, FairWare '18: Proceedings of the IEEE/ACM International Workshop on Software Fairness, Gothenburg, May 2018, pp. 32-37. doi: 10.23919/FAIRWARE.2018.8452918 https://dblp.org/db/conf/icse/fairware2018.html https://dl.acm.org/doi/10.1145/3194770.3194772
- Holstein, Tobias, Dodig-Crnkovic G. and Pelliccione P. (2018) Ethical and Social Aspects of Self-Driving Cars, http://arxiv.org/abs/1802.04103
- Johnsen, Andreas, Dodig-Crnkovic G., Lundqvist K., Hänninen K., Pettersson P. Risk-based Decision- making Fallacies: Why Present Functional Safety Standards Are Not Enough. MARCH2017 International Workshop on decision Making in Software Architecture @ ICSA 2017 Gothenburg, Sweden. 04.04.2017. Published in: Software Architecture Workshops (ICSAW), 2017 IEEE International Conference. DOI: 10.1109/ICSAW.2017.50

Ethics publications in collaboration with my students

- Dodig-Crnkovic G. and Çürüklü Baran. Robots - Ethical by Design, Ethics and Information Technology 2011, Volume 14, Number 1, pp. 61-71. http://www.springerlink.com/content/f432g33181787u63/fulltext.html
- Irfan Šljivo, Elena Lisova, Sara Afshar (2017) Agent-Centred Approach for Assuring Ethics in Dependable Service Systems. 2017 IEEE World Congress on Services (SERVICES), Legal, Social and Ethical Aspects of Services Science. pp. 51-58
- Dodig-Crnkovic, G. and Sapienza, Gaetana, Ethical Aspects of Technology in the Multi-Criteria Decision Analysis. IACAP conference, Ferrara, June 14-17, 2016.
- Sapienza, Gaetana, Dodig-Crnkovic, G. and Crnkovic, I. Inclusion of Ethical Aspects in Multi-Criteria Decision Analysis. Proc. WICSA and CompArch conference. Decision Making in Software ARCHitecture (MARCH), 2016 1st International Workshop. Venice April 5-8 2016. DOI: 10.1109/MARCH.2016.5, ISBN: 978-1-5090-2573-2. IEEE
- Jägemar, Marcus and Dodig-Crnkovic, G. Cognitively Sustainable ICT with Ubiquitous Mobile Services - Challenges and Opportunities. In Proceedings of the 37th International Conference on Software Engineering - ICSE '15, Vol. 2. IEEE Press, NJ, USA, 531-540.
- Thekkilakattil, Abilash and Dodig-Crnkovic, G., Ethics Aspects of Embedded and Cyber-Physical Systems In IEEE Proceedings of COMPSAC 2015: The 39th Annual International Computers, Software & Applications Conference, Symposium on Embedded & Cyber-Physical Environments (ECPE). Taichung, Taiwan - July 1-5, pp. 39-44, 2015. DOI: 10.1109/COMPSAC.2015.41
- Backhaus Patrick and Dodig-Crnkovic G., Wikileaks and Ethics of Whistle Blowing, Proceedings IACAP 2011. The computational Turn: Past, Presents, Futures?, p 332, Mv-Wissenschaft, Münster, Århus University, Danmark, Editor(s): Charles Ess and Ruth Hagengruber, July 2011

Ethics publications in collaboration with my students

- De Gooijer Thijmen and Dodig-Crnkovic G., Wikileaks and Ethics of Whistle Blowing, Proceedings IACAP 2011. The computational Turn: Past, Presents, Futures?, p 332, Mv-Wissenschaft, Münster, Århus University, Danmark, Editor(s): Charles Ess and Ruth Hagengruber, July 2011
- Georgieva Margaryta and Dodig-Crnkovic G., Who Will Have Irresponsible, Untrustworthy, Immoral Intelligent Robot?, Proceedings IACAP 2011. The Computational Turn: Past, Presents, Futures?, p 129, Mv-Wissenschaft, Münster, Århus University, Danmark, Eds.:Charles Ess and Ruth Hagengruber, July 2011
- Ahiska Ceren (2010) Computer-Mediated Human Manipulation and Uniqueness of Computer Ethics - http://www.idt.mdh.se/kurser/comphil/2009/CAP-FINAL/CerenAhiska-final.pdf - Presented at ECAP 2010
- Gawrylczyk Robert (2010) Should Robots That Interact With Humans Look Like Humans? - http://www.idt.mdh.se/kurser/comphil/2009/CAP-FINAL/GawrylczykRobert_final.pdf Presented at ECAP 2010
- Dodig-Crnkovic G. and Anokhina Margaryta, Workplace Gossip and Rumor: The Information Ethics Perspective, Proceedings of the Tenth International Conference ETHICOMP 2008, Living, Working And Learning Beyond Technology, T W Bynum, M C Calzarossa, I De Lotto and S Rogerson, (Editors)
- Dodig-Crnkovic G., Horniak Virginia, Ethics and Privacy of Communications in the e-Polis, Information Security and Ethics: Concepts, Methodologies, Tools, and Applications Edited By: Hamid Nemati, 2008
- Dodig-Crnkovic G., Horniak Virginia, Ethics and Privacy of Communications in the e-Polis, Encyclopedia of Digital Government, Idea Group Reference, July 25, 2006

Ethics publications in collaboration with my students

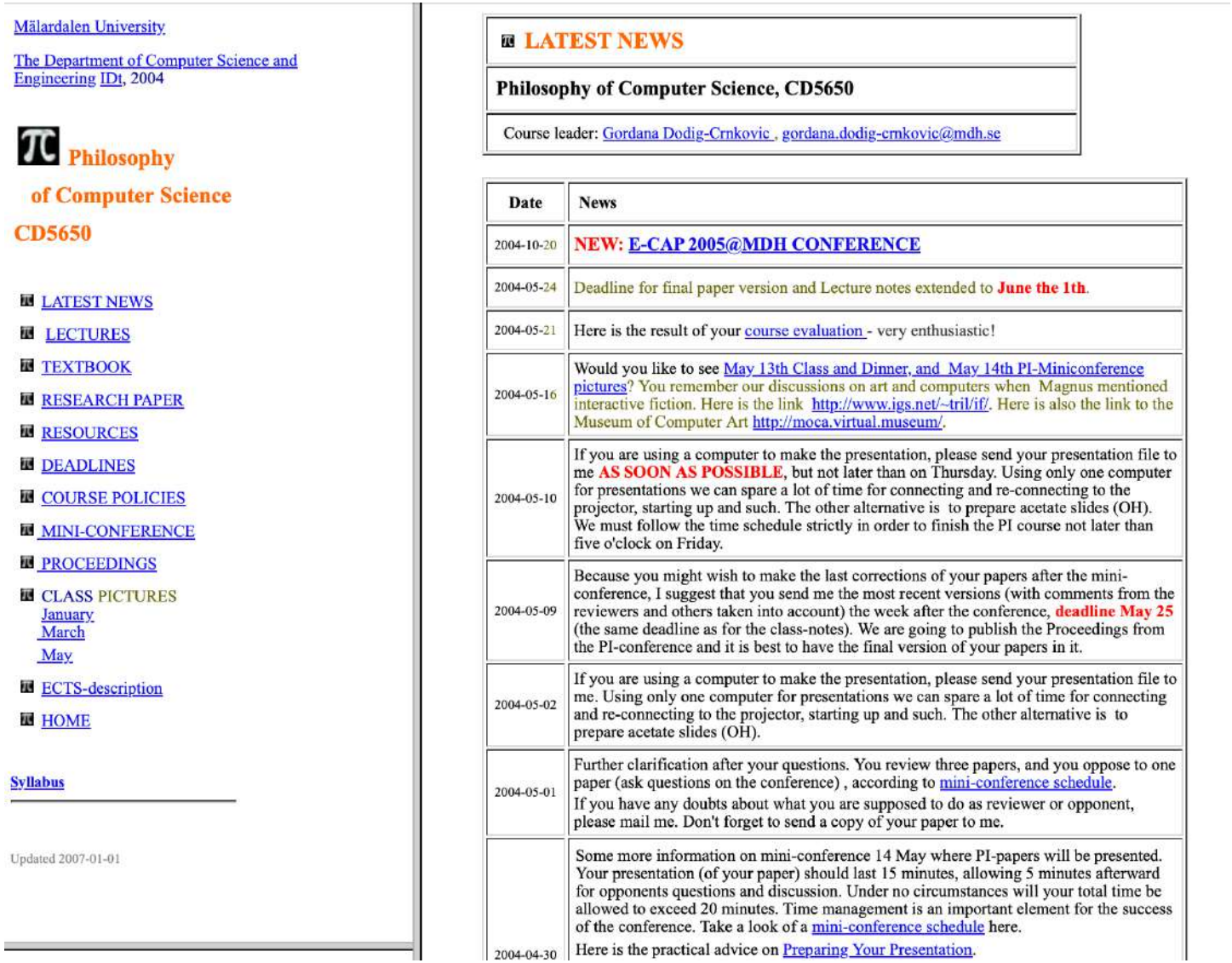
- Dodig-Crnkovic G., **Horniak Virginia**, Togetherness and Respect - Ethical Concerns of Privacy in Global Web Societies. Special Issue of AI & Society: The Journal of Human-Centred Systems and Machine Intelligence, on "Collaborative Distance Activities: From Social Cognition to Electronic Togetherness", CT. Schmidt Ed., Vol 20 No.3, 2006
- Dodig-Crnkovic G., and **Larsson Thomas,** Game Ethics - Homo Ludens as a Computer Game Designer and Consumer. International Journal of Information Ethics, Special Issue on The Ethics of E-Games, Vol. 4 - December 2005
- Dodig-Crnkovic G. and **Horniak Virginia**, Good to Have Someone Watching Us from a Distance? Privacy vs. Security at the Workplace. Ethics of New Information Technology, Proceedings of the Sixth International Conference of Computer Ethics: Philosophical Enquiry, CEPE 2005, July 17- 19, 2005, University of Twente, Enschede, The Netherlands; Brey P, Grodzinsky F and Introna L, Eds. http://cepe2005.utwente.nl/
- Dodig-Crnkovic G. and **Çürüklü Baran,** Robots - Ethical by Design, Ethics and Information Technology 2011, Volume 14, Number 1, pp. 61-71. http://www.springerlink.com/content/f432g33181787u63/fulltext.html
- **Larsson Magnus,** Predicting Quality Attributes in Component-based Software Systems, PhD Thesis, Mälardalen University Press, Sweden, ISBN: 91-88834-33-6, 2004 (Chapter on ethics aspects)
- **Larsson Stig**, Improving Software Product Integration, Licentiate Thesis, Mälardalen University Press, Sweden, ISBN 91-88834-65-4, 2005, ORCID: 0000-0002-0921-0878 (Chapter on ethics aspects)

Practical exercise for doctoral students: Doctoral Symposium @ IS4SI 2017 Digitalisation For a Sustainable Society

Papers written by my students based on their course essays

- Faragardi Hamid Reza (2017) Ethical Considerations in Cloud Computing Systems. Proceedings. 1. 166. 10.3390/IS4SI-2017-04016.
- Holstein Tobias (2017) The Misconception of Ethical Dilemmas in Self-Driving Cars. Proceedings. 1. 166. 10.3390/IS4SI-2017-04016.
- Wallmyr Markus (2017) Exploring interaction design with information intense heavy vehicles. Proceedings. 1. 166. 10.3390/IS4SI-2017-04016.
- Maro Salome (2017) The automotive domain - From Multi-disciplinarity to Transdisciplinarity. Proceedings. 1. 166. 10.3390/IS4SI-2017-04016.
- Nyende Hawa (2017) Predicting pregnancy complications in low resource contexts. A case study of maternal healthcare in Uganda. Proceedings. 1. 166. 10.3390/IS4SI-2017-04016.
- Smith Göran (2017) Ethical aspects of pursuing participatory research as an industrial doctoral student. Proceedings. 1. 166. 10.3390/IS4SI-2017-04016.
- Kade Daniel (2015) Ethics of Virtual Reality Applications in Computer Game Production. Philosophies 1 (1), 73-86

Swedish National Course in Philosophy of Computer Science, 2004 & Computing and Philosophy, Global Course (with University of Illinois, Springfield, and several European universities) (2008 – 2014) (PhD)



Mälardalen University

The Department of Computer Science and Engineering IDt, 2004

Philosophy of Computer Science

CD5650

- LATEST NEWS
- LECTURES
- TEXTBOOK
- RESEARCH PAPER
- RESOURCES
- DEADLINES
- COURSE POLICIES
- MINI-CONFERENCE
- PROCEEDINGS
- CLASS PICTURES
  - January
  - March
  - May
- ECTS-description
- HOME

Syllabus

Updated 2007-01-01

LATEST NEWS

Philosophy of Computer Science, CD5650

Course leader: Gordana Dodig-Crnkovic , gordana.dodig-crnkovic@mdh.se

Date	News
2004-10-20	**NEW: E-CAP 2005@MDH CONFERENCE**
2004-05-24	Deadline for final paper version and Lecture notes extended to **June the 1th**.
2004-05-21	Here is the result of your course evaluation - very enthusiastic!
2004-05-16	Would you like to see May 13th Class and Dinner, and May 14th PI-Miniconference pictures? You remember our discussions on art and computers when Magnus mentioned interactive fiction. Here is the link http://www.igs.net/~tril/if/. Here is also the link to the Museum of Computer Art http://moca.virtual.museum/.
2004-05-10	If you are using a computer to make the presentation, please send your presentation file to me **AS SOON AS POSSIBLE**, but not later than on Thursday. Using only one computer for presentations we can spare a lot of time for connecting and re-connecting to the projector, starting up and such. The other alternative is to prepare acetate slides (OH). We must follow the time schedule strictly in order to finish the PI course not later than five o'clock on Friday.
2004-05-09	Because you might wish to make the last corrections of your papers after the mini-conference, I suggest that you send me the most recent versions (with comments from the reviewers and others taken into account) the week after the conference, **deadline May 25** (the same deadline as for the class-notes). We are going to publish the Proceedings from the PI-conference and it is best to have the final version of your papers in it.
2004-05-02	If you are using a computer to make the presentation, please send your presentation file to me. Using only one computer for presentations we can spare a lot of time for connecting and re-connecting to the projector, starting up and such. The other alternative is to prepare acetate slides (OH).
2004-05-01	Further clarification after your questions. You review three papers, and you oppose to one paper (ask questions on the conference) , according to mini-conference schedule. If you have any doubts about what you are supposed to do as reviewer or opponent, please mail me. Don't forget to send a copy of your paper to me.
2004-04-30	Some more information on mini-conference 14 May where PI-papers will be presented. Your presentation (of your paper) should last 15 minutes, allowing 5 minutes afterward for opponents questions and discussion. Under no circumstances will your total time be allowed to exceed 20 minutes. Time management is an important element for the success of the conference. Take a look of a mini-conference schedule here. Here is the practical advice on Preparing Your Presentation.

http://www.gordana.se/PI_04/index.html

SWEDISH NATIONAL COURSE IN COMPUTING AND PHILOSOPHY

Publications from the course

Computing and Philosophy course started in 2004 as a Swedish National Course, developed as a result of collaboration in a research network PI (Torbjörn Lager, Joakim Nivre, Jan Odelstad, Björn Lisper, Peter Funk, Jan Gustafsson, Ulla Ahonen-Jonnarth, Gordana Dodig-Crnkovic). Participants from different universities (Blekinge, Dalarna, Mälardalen, Skövde, Uppsala) have taken part in the course. They presented their research papers at the Mini-conference.

Several articles written for the course have been accepted for international conferences and published otherwise.

Afterward, for several years, the CAP course was held in collaboration with the University of Illinois Springfield (Peter Boltuc) with guest lecturers Luciano Floridi, Erik Sandewall, Lars-Göran Johansson, Vincent Müller, and others).

Thomas Larsson: Ethics of the Hyperreal

Magnus Johansson: When Simulations Become Reality

Kim Anttila: Ethics in the Computer Profession

Mikael Sandberg: Gender Distribution Normalization in the Computer Game Development Arena

Omar Bagdadi: Is Big Brother a Human Necessity?

Virginia Horniak: Privacy of Computing – An Ethical Analysis

SWEDISH NATIONAL COURSE IN COMPUTING AND PHILOSOPHY

Publications from the course

Christina Björkman (2005) Feminist Theory in Computer Science - Chapter as a part of the PhD thesis, Crossing Boundaries, Focusing Foundations, Trying Translations: Feminist Technoscience Strategies in Computer Science
https://www.diva-portal.org/smash/record.jsf?pid=diva2%3A837505&dswid=1692

Two MSc students presenting at ECAP-2010 conference:

Ceren Ahiska (2010) Computer-Mediated Human Manipulation and Uniqueness of Computer Ethics, http://www.idt.mdh.se/kurser/comphil/2009/CAP-FINAL/CerenAhiska-final.pdf. ECAP-2010 conference

Robert Gawrylczyk (2010) Should Robots That Interact With Humans Look Like Humans? http://www.idt.mdh.se/kurser/comphil/2009/CAP-FINAL/GawrylczykRobert_final.pdf ECAP2010 conference

APA Computing and Philosophy newsletter

Papers written by my students based on their course essays

- Sebek Linda (2013) Assistive Environment: The Why and What.
  APA Computing and Philosophy journal
- Juan M. Duran (2013) A brief Overview of philosophical Study of Computer Simulations

Philosophy and Computers

FALL 2013 VOLUME 13 | NUMBER 1

Notice among the contributors in this issue **Jaakko Hintikka**, the founder of formal epistemic logic and game semantics for logic, one of the leading contemporary logicians.
https://en.wikipedia.org/wiki/Jaakko_Hintikka

EXPERIENCES FROM MY TEACHING OF ETHICS TO PHD STUDENTS

An example of an introductory lecture for Ph.D. students in Software Engineering with a focus on automation - August 2018

809

47. Automation and Ethics

Srinivasan Ramaswamy, Hemant Joshi

Should we trust automation? Can automation cause harm to individuals and to society? Can individuals apply automation to harm other individuals? The answers are yes; hence, ethical issues are deeply associated with automation. The purpose of this chapter is to provide some ethical background and guidance to automation professionals and students. Governmental action and economic factors are increasingly resulting in more global interactions and competition for jobs requiring lower-end skills as well as those that are higher-end endeavors such as research. Moreover, as the Internet continually eliminates geographic boundaries, the concept of doing business within a single country is giving way to companies and organizations focusing on serving and competing in international frameworks and a global marketplace. Coupled with the superfluous nature of an Internet-driven social culture, the globally-distributed digitalization of work, services and products, and the reorganization of work processes across many organizations have resulted in ethically challenging questions that are not just economically, or socially sensitive, but also highly culturally sensitive. Like the shifting of commodity manufacturing jobs in the late 1900s, standardization of information technology and engineering jobs have also accelerated the prospect of services and jobs more easily moved across the globe, thereby driving a need for innovation in design, and in the creation of higher-skill jobs. In this chapter, we review the fundamental concepts of ethics as it relates to automation, and then focus on the impacts of automation and their significance in both education and research.

Part E | 47

IDEA League School
Engineering Complex Systems
with Big data and Information Technology
ECS-BIT'18, Gothenburg 2018 08 31

FORA Fog Computing for Robotics and Industrial Automation Summer School Seminar on ETHICS, Vienna 2018 06 08

Ramaswamy S., Joshi H. (2009) Automation and Ethics. In: Nof S. (eds) Springer Handbook of Automation. Springer, Berlin, Heidelberg

Topics with ethical relevance that students identified in the questionnaire before the lecture – technology aspects

Data-related

- *Data provenance (attribution, background)*
- Data confidentiality
- Data privacy
- Public understanding of technology and protection of private data
- Data quality, property and equality
- Data-driven approaches
- Reproducibility of real time datasets
- Data is never "neutral"
- Data collection influences behavior
- Data-streching used in political purpose
- security and reliability of the IoT devices
- "Surplus data" from screening of patients that can reveal much more
- Transparency vs. quality

Sustainability-related

- Fuel economy, lower emissions, reduced take-off and landing noise
- Environmental contributions of battery production, use and disposal
- Environmental impact of massive electronic production
- Increasing demand of rare elements
- **Lack of life cycle assessment**
- **Rebound effect**
- Digital sustainability?

Topics with ethical relevance identified

- methodology aspects

- Values involved in the method choices
- Epistemic problems related work – acknowledging its limitations
- Reducing reality into a model, with a loss of depth and variety of perspectives?
- Marginalizing the designer in the design process?
- Level of transparency is acceptable for an automated tool?
- Should we rely on automated tools if we consider the intrinsic limits of the learning process?
- Data-driven development methodology
- genetic discrimination
- genetic modification/engineering
- A tradeoff between safety and innovation
- OPEN SCIENCE
- Simulation compared to real experiments
- Making a connection between qualitative and quantitative information
- Application of the complex system in Landscape studies
- Reproducibility
- System's performance is almost always evaluated in isolation [QUESTION OF INTERPRETATION OF RESEARCH RESULTS]
- Authors do not verify their results thoroughly enough, or they hide complications
- THE REVIEW PROCESS IS NOT DOUBLE-BLIND
- Presentation of results (overemphasizing of their importance)

Topics with ethical relevance students identified - social aspects

- Cultural diversity
- Professional conduct
- Gender equality
- Quality of life
- Impact of technology on society at large
- Is the purpose of the analysis relevant enough to expose the users to privacy loss?
- Designing technology that could reduce the need for human employees?
- Entrusting the machine to define culturally relevant spaces for our cities?
- Legal issues related to copyright infringement
- Involving stakeholders/users
- Trust between stakeholders?
- Professional societies/organisations and
- Codes of Ethics
- Popular presentation of research and public opinion about research
- Informing the politics about possibilities and challenges of research

Ethics high on the agenda: Example CACM 2018 08

- INFORMATICS EUROPE AND ACM EUROPE COUNCIL Regulating Automated Decision Making
- CERF'S UP Traceability -workshop on cybersecurity was how to preserve the freedom and openness of the Internet while protecting against the harmful behaviors
- LETTERS TO THE EDITOR Encourage ACM to Address U.S. Election Integrity
- In the spirit of Moshe Y. Vardi's call for ACM to ". . . be more active in addressing social responsibility issues raised by computing technology," we urge the ACM U.S. Public Policy Council to undertake a study of the technological …*CACM Staff*
- BLOG@CACM Assessing Responsibility for Program Output
- We lack an easy way to indicate that algorithms do not make decisions and are not biased; programmers do, and are. *Robin K. Hill*
- Animals Teach Robots to Find Their Way
- Navigation research demonstrates bio-machine symbiosis. *Chris Edwards*
  Electronics Are Leaving the Plane Stacking chips and connecting them vertically
- Broadening the Path for Women in STEM - Organizations work to address 'a notable absence of women in the field.'*Esther Shein*
- GLOBAL COMPUTING Designing Sustainable Rural Infrastructure Through the Lens of OpenCellular
- EDUCATION Providing Equitable Access to Computing Education
- Seeking the best measures to reach advantaged and less-advantaged students equally. *Mark Guzdial, Amy Bruckman*
- COLUMN: KODE VICIOUS Every Silver Lining Has a Cloud

https://cacm.acm.org/magazines/2018/8

Ethics high on the agenda: Example CACM 2023 05

- ACM for the Public Good

The ACM 4.0 Initiative aims to lay the foundations of ACM for the next 25 years on issues of service to society and to ACM members, ACM membership, ACM finances, and internal processes. *Moshe Y. Vardi*

- A Career Built on Using Technology to Help Others

Everyone deserves the access and opportunity to have a good and fulfilling life. Technologies can only contribute toward this goal when they are designed from an understanding of what makes a life good for the people concerned … *Jules Maitland*

- Women in Computer Science Are Making Strides

Computer science is still not a level playing field for those women who majored in it and choose to pursue it as a career. *Esther Shein*

- Do the Right Thing

Exploring the intersection of legal compliance and ethical judgment. *Kendra Albert, James Grimmelmann*

- Updates, Threats, and Risk Management

Revisiting a recent column considering security updates. *Steve Lipner, John Pescatore*

- Ethics as a Participatory and Iterative Process

Facilitating ethical reflection, inquiry, and deliberation. *Marc Steen*

- NSF on Chien's Grand Challenge for Sustainability

This Viewpoint focuses on ways the computing community can contribute broadly to environmental sustainability and identifies NSF Directorate for Computer and Information Science and Engineering research programs supporting these … *Nina Amla, Dilma Da Silva, Michael Littman, Manish Parashar*

- ChatGPT, Can You Tell Me a Story?

An exercise in challenging the true creativity of generative AI. *Ralph Raiola*

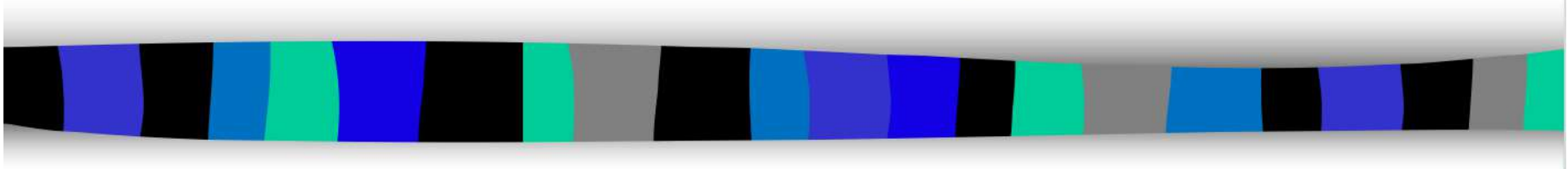
https://cacm.acm.org/magazines/2023/5 Communications of the ACM (Association for Computing Machinery)

PROFESSIONAL ETHICS COURSE AT MÄLARDALEN UNIVERSITY SWEDEN

PROFESSIONAL ETHICS COURSE

7.5 ECTS

Mälardalen University, Sweden



Gordana Dodig Crnkovic

Mälardalen University, Sweden

http://www.es.mdh.se/staff/37-Gordana_Dodig_Crnkovic

https://www.mdh.se/staff?id=gdc01

■ LECTURES

Professional Ethics in Science and Engineering, CD5590

Teacher and examiner: Gordana Dodig-Crnkovic , gordana.dodig-crnkovic@mdh.se

Time & Place: Monday & Thursday, 13:15 - 15:00, Classroom V220 (V222 on 11-27 and 12-05)

DATE		TOPIC
3 Nov L1		GETTING STARTED. Course Preliminaries. Introduction. Administrivia. Identifying Moral Issues Basic Moral Orientations
6 Nov L2		METHODS AND TOOLS OF ANALYSIS OF ETHICAL ARGUMENT Philosophical Foundations of Ethics Ethical Relativism, Absolutism and Pluralism
10 Nov L3		The Ethics of Conscience The Ethical Egoism The Ethics of Duty The Ethics of Respect

13 Nov L4		The Ethics of Consequences: Utilitarianism The Ethics of Rights The Ethics of Justice
17 Nov L5		The Ethics of Character The Ethics and Gender
20 Nov L6/E1	 Beehives	PROFESSIONAL AND ETHICAL RESPONSIBILITIES Codes of Ethics. Whistle Blowing In-class activity: CASE STUDIES (Jessica, Karin, Henrik)
24 Nov L7/E2	 Beehives	ENVIRONMENTAL ETHICS In-class activity: CASE STUDIES (Teresa, Said)
27 Nov L8		GUEST LECTURE BY PETER FUNK AI and Ethics
01 Dec L9		GUEST LECTURE BY KERSTI MALMSTEN Nursing and Medical Ethics

4 Dec L10/E3	 Beehives	PRIVACY AND CIVIL LIBERTIES In-class activity: CASE STUDIES (Virginia, Jörgen)
05 Dec L11		GUEST LECTURE BY MONIKA EIBORN Nuclear Non-proliferation and Ethics Nucleus 02 2003 side 39
08 Dec L12/E4	 Beehives	RISKS IN TECHNOLOGY AND SCIENCE PRECAUTIONARY PRINCIPLE In-class activity: CASE STUDIES (Jonas, Balaji, Artur)
11 Dec L13/E5	 Beehives	INTELLECTUAL PROPERTY In-class activity: CASE STUDIES (Magnus, Jens)
12 Dec L14/ E6	 Beehives	COMPUTER GAMES AND ENTERTAINMENT In-class activity: CASE STUDIES (Thomas, Kim)
15 Dec L15		COURSE WRAP-UP. RESEARCH PAPER + CLASS NOTES
TAKE-HOME EXAM		MINI-CONFERENCE

Research Ethics & Sustainable Development, GFOK025 – PhD Course at Chalmers University of Technology (PhD course, revised and further developed) (2014-2017)

RESEARCH ETHICS & SUSTAINABLE DEVELOPMENT

CHALMERS UNIVERSITY OF TECHNOLOGY SWEDEN

Research Ethics & Sustainable Development

3.0 ECTS

GFOK025

Day 1 Part 1 – Course Introduction

Gordana Dodig-Crnkovic

Learning Outcomes

The aims of this course are to:

1) understand the nature and range of ethical issues in research and sustainable development;

2) understand what is meant by sustainable development and potential implications for research, in particular in the own research project;

3) familiarize with a framework for decision making when faced with ethical issues and

4) appreciate the complex relation between science and society.

Assessment of the Outcomes

A successful completion of this course will be judged on the following:

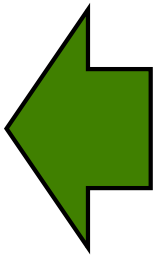
1. Attendance and preparation for the in-class discussions.
2. Writing an essay describing ethical and sustainability aspects of the PhD research project (or equivalent) of the participant. It is based on the interviews with at least two stakeholders.
3. Participation in a peer review seminar in which you give feedback on other graduate students essays and receive feedback on your own essay.
4. Group work preparing presentations for the Mini-conference.
5. A Mini-conference with "lightning talk" presentations of individual essays, common group conclusions and the subsequent class discussion.

Course Overview

Day 1

Problems & Principles

Course intro & Ethics (Gordana)
Sustainable Development (Magdalena)

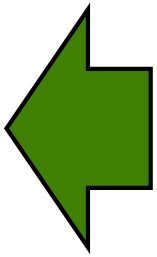


Assignment and readings

Day 2

Science and Society

Research Policy (Sven)
Publishing Ethics & Societal Aspects of Technology (Guest lectures)

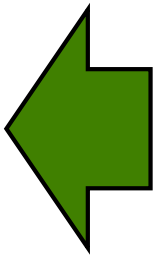


Assignment and readings

Course Overview

Day 3

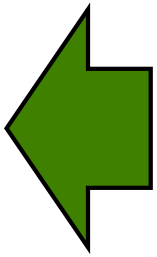
Peer Review Meeting for SD-RE Essays
(Class in Review Groups)



Essay SD-RE

Day 4

Group Meetings
(Class, preparation for Mini-conf.)



Preparation for the Mini-conference

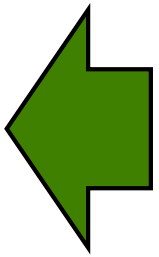
Course Overview

Day 5

Mini-conference

(Class, Gordana)

1 2 3 4 I 5 6 7 8

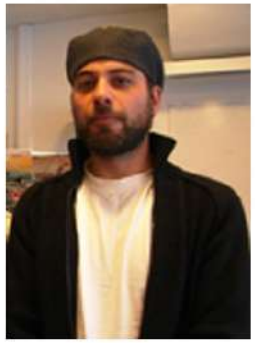


"Lightning talk" individual presentations; group conclusions followed by the class discussion

Course Teaching Team



Gordana Dodig-Crnkovic, course responsible
Magdalena Svanström
Sven Andersson
Guest lectures: Erik Bohlin, Claes Strannegård

Previous editions course responsible:
Elisabeth Saalman
Tom Adawi

PHD COURSES AT VIENNA UNIVERSITY OF TECHNOLOGY, TUW

Motto: Technology for people

2023 Digital Ethics and the Connected World TU Wien, Vienna University of Technology

2024 Digital Ethics and the Connected World TU Wien, Vienna University of Technology

DIGITAL ETHICS AND THE CONNECTED WORLD
199.108 SCHEDULE, TUW 2023

Day 1	Tue	12:00 - 14:00	02.05.	Seminarraum EBEG-2 - RPL	Course introduction & Getting started
Day 2	We	15:00 - 17:00	03.05.	Sem.R. DA grün 02 C - GEO	Professional Ethics in computer science and Engineering – Basics Ethics in research writing and peer review
Day 3	Thu	12:00 - 14:00	04.05.	Seminarraum FAV 01 A (Seminarraum 183/2)	Digital Ethics and the Connected World-Compendium. Beyond Compliance
Day 4	Fri	13:00 - 15:00	05.05.	Seminarraum FAV 01 A (Seminarraum 183/2)	Global ethics picture. Wolfgang Hofkirchner, Guest lecture
Day 5	Mo	13:00 - 15:00	08.05.	Seminarraum EBEG-2 - RPL	Digital Humanism. European approach to ethics of emerging technologies. Planning for essay writing
Day 6	Tue	12:00 - 14:00	09.05.	Seminarraum EBEG-2 - RPL	Introduction to topics of AI Ethics and Ethics of Robotics. Social aspects of AI and relations to Democracy. European AI Act (AIA). US AI Bill Of Rights. Class discussions. Planning for Essays, Class Notes, Review process and Mini-conference.
Day 7	We	13:00 - 15:00	10.05.	Seminarraum FAV 01 A (Seminarraum 183/2)	AI Ethics, Design and Regulation. Autonomous Cars and Ethics of Robotics. Planning for assignments.
Day 8	Thu	14:00 - 16:00	11.05.	Seminarraum FAV 01 A (Seminarraum 183/2)	Ethics & Design. Peter-Paul Verbeek: Technological mediation & Moralizing things. Philipp Brey: Ethics By Design and Ethics of Use. Mark Coeckelbergh: Technology Games. Neri Oxman. Computational Design Speculative Design.
Day 9	Fri	13:00 - 15:00	12.05.	Seminarraum FAV 01 A (Seminarraum 183/2)	Research Ethics & Sustainable Development Protocols Research essays proposals review.
Day 10	Mo	12:00 - 14:00	15.05	Seminarraum EBEG-2 - RPL	COURSE WRAP-UP. WHAT HAVE WE LEARNED? LOOKING AHEAD, PAPER WRITING & MINI-CONFERENCE, CLASS NOTES.

DIGITAL ETHICS AND THE CONNECTED WORLD
199.108 SCHEDULE, TUW 2024

Day	Date	Lect	Time	Location	Topic
Thu	02.05.	L1	13:00-16:00	Seminar room Argentinierstrasse	Introduction-to-Ethics-class & the course & "Compendium"
Fri	03.05.	L2	13:00-16:00	FAV lecture hall 3 (Zemanek seminar)	Ethics Basics
Mon	06.05.	L3	13:00-16:00	Seminar room FAV 01 B (seminar room 187/2)	Ethics in Research & Publication Beyond Compliance
Tue	07.05.	L4	13:00-16:00	FAV lecture hall 3 (Zemanek seminar)	Navigating the White-Water World Emerging Technologies & Speculative Design
Wed	08.05.	L5	13:00-15:00	Seminar room FAV 05 (seminar room 186)	Digital Humanism-European Debates European Approach to AI
Mon	13.05.	L6	13:00-15:00	Seminar room FAV 01 B (seminar room 187/2)	Ethics and Design. Robot Ethics
Tue	14.05.	L7	13:00-15:00	FAV lecture hall 3 (Zemanek seminar)	Course Wrap-Up & Planning Ahead
Wed	15.05.	L8	13:00-15:00	ONLINE IN ZOOM https://chalmers.zoom.us/my/gordana	AI Future, "The End of Humanity"? film and discussion. Guest Profs.: Wolfgang Hofkirchner and Sarah Spiekermann

https://tuw-maps.tuwien.ac.at/?campus=1

CONCLUSIONS

- Courses are based on the independent individual work of students
- Balance between theory and practical cases
- In-class active participation
- Presence in the class
- For the missed lectures- compensatory short essays
- Bringing in guest lecturers with relevant experiences
- Sharing experiences in peer-review meetings & group work, networking
- References to the current events
- Relevance of ethics topics for students' own context
- Applicability and generalizability of approaches from what is learned

- **Humble teaching attitude** – no preaching and no besserwisser (know-all) style
- Using authority/power with utmost care
- Ethics is not about being perfect but being as good as reasonably possible,
  given human cognitive constraints
- Introducing students to the world of research and real-world problems
- Cultivating analytic-synthetic thinking, and logical reasoning/argument
- Respect for different positions/traditions/cultures, stakeholders
- Arguing for the necessity of understanding the subject matter (technology) in order to make informed judgments
- Interdisciplinarity/Transdisciplinarity center-stage
- Keeping in mind – we are educating for the FUTURE – identifying seeds of future developments and addressing their promises and challenges
- **Educating T-SHAPED ENGINEERS** – deep in technology, broad in humanities (Barry Bohm)

EXAMINATION FORMS

- INDIVIDUAL CLASS-NOTES – What did I find interesting in this lecture – students' own reflections
- IN-CLASS PRESENTATION OF A CHOSEN TOPIC – Students choose a topic from their research. For undergrads, topics that interest them.
- RESEARCH PAPER, WITH THE AIM TO PRESENT AT A CONFERENCE OR PUBLISH IN A JOURNAL
- PRESENTATION ON THE MINI-CONFERENCE (IN CLASS)

CHALLENGES AND THE FUTURE PROSPECTS

- At the beginning (2000), it was not easy to develop a course on ethics for students of computing and engineering. There was "no place" for yet another course in the curriculum. There was no feeling of urgency, which gradually formed with the recent huge advances of AI.

- The hope is the introduction of ethics education to change the situation and encourage and support colleagues researchers, young and established, by exchange of experiences and resources

- In the future, given the impressive development of intelligent, nano-, bio-, neuro-, medical-, and other emerging technologies that can radically change our personal lives and the whole civilization, in which computing professionals are heavily involved, it is of central importance that professionals contribute to our common knowledge about possible features, promises, and challenges of emerging technologies.

THE BASIC IDEA BEHIND RESEARCH-BASED TEACHING

The idea of the roles of the teacher and students in a research-based ethics course can be compared to the work of a Renaissance art studio. It is **beyond the template of compliance** (students trained to comply with a list of rules). Instead, the students are actors who co-create the course through research collaboration.

Young Leonardo da Vinci was taken by his father to the studio of Andrea Verrocchio in Florence. It was the most important workshop in the city and many of the young apprentices working there, such as Botticelli and Perugino, would later become famous.

It was in this workshop that Leonardo received the training that best suited his spirit of enthusiastic experimenter. Verrocchio coordinated the many activities of his workshop. Ever since the thirteenth century, it was usual for the master to allow his best pupils to complete works that had been thought of and sketched out by him.

https://izi.travel/en/fed2-andrea-del-verrocchio-leonardo-da-vinci-and-others-battesimo-di-cristo/en