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D8.3 First Humane AI NET summer school on Human centric AI

Author(s): Mohamed Chetouani
Contributing partners: DFKI, SU, UMU
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Contact: mohamed.chetouani@sorbonne-universite.fr

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Authors

Authors	Institution	e-mail
Mohamed Chetouani (MC)	SU	Mohamed.Chetouani@sorbonne-universite.fr
George Kampis (GK)	DFKI	George.Kampis@dfki.de

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EXECUTIVE SUMMARY

The current document summarizes the First Humane AI NET Summer School on Human Centric AI as proposed in DoA as part of the WP8.

The First Humane AI NET Summer School is a major contribution of Humane AI NET to education and scientific dissemination on AI (www.acai2021.org). The consortium has organized the Advanced Course on AI (ACAI), a specialized course in Artificial Intelligence sponsored by EurAI in odd-numbered years. This year's topic was Human Centered AI and the HumanE AI-Net project did not only organize and host the event but also provided for more than half of the lectures based on the work and competencies of the project.

Springer will publish the content of the lectures and all slides will be made available as a blueprint for an entire Human Centric AI course that can be adapted by Universities throughout Europe. This **4-day event in hybrid form included 14 tutorials and 4 keynotes, and was attended by 60 students in Berlin and 50 students online.** It concluded with an open session (with around 250 participants) with keynotes by Prof. Ben Shneiderman of Maryland University and Turing Award winner Prof. Yoshua Bengio of Montreal.

1. ORGANIZATION

The "First Humane AI NET Summer School", has been organized as a specialized course in AI sponsored by EurAI. The main theme of ACAI 2021 (18th Advanced Course on AI) was "Human-Centered AI".

EurAI took the opportunity of ACAI to present the EurAI Artificial Intelligence Dissertation Award, which was awarded to Mikel Artetxe at Facebook AI Research.

The main organizers of ACAI 2021 are:

- Virginia Dignum, Umea University, General Chair
- Paul Lukowicz, DFKI, General Chair
- Mohamed Chetouani, Sorbonne University, Publications Chair
- Davor Orlic, Knowledge 4 All Foundation, Publicity Chair
- Tatyana Sarayeva, Umea University, Organising Chair

with a support of EurAI and Artificial Intelligence (Journal).

The organisation of ACAI 2021 took places during a high uncertainty period due to the COVID-19 pandemic. It has been decided to propos both in persona and online participation.

ACAI 2021 was organized in Berlin (11-14 October 2021). The organization team asked participants to frequently check information on entry, testing and quarantine regulations in Germany (see website: https://www.humane-ai.eu/event/acai2021/).

2. PROGRAMME

ACAI programme **included 14 tutorials and 4 keynotes** addressing basic and advanced topics of Human Centered AI.

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The programme was enriched by an open session (with around 250 participants) with keynotes by Prof. Ben Shneiderman of Maryland University and Turing Award winner Prof. Yoshua Bengio of Montreal. This session was open to al HumanE AI NET consortium as part of our meeting, and to other ICT48 projects through AIDA (AI Doctoral Academy supported by ICT48 projects).

The list of tutorials is as follows:

- *Cognitive Vision: On Deep Semantics for Explainable Visuospatial Computing*, Mehul Bhatt, Örebro University - CoDesign Lab EU; Jakob Suchan, University of Bremen
  (see *Tutorial Outline*)
- *Ethics and AI: An Interdisciplinary Approach*, Guido Boella, Università di Torino; Maurizio Mori, Università di Torino
  (see Tutorial Outline)
- *Children and the Planet - The Ethics and Metrics of "Successful" AI*, John Havens, IEEE; Gabrielle Aruta, Filo Sofi Arts
  (see *Tutorial Outline*)
- *Mythical Ethical Principles for AI and How to Operationalise Them*, Marija Slavkovik, University of Bergen
  (see Tutorial Outline)
- *Operationalising AI Ethics: Conducting Socio-Technical Assessment*, Andreas Theodorou, Umeå University & VeRAI AB; Virginia Dignum, Umeå University & VeRAI AB
  (see *Tutorial Outline*)
- *Explainable Machine Learning for Trustworthy AI,* Fosca Giannotti, CNR; Riccardo Guidotti, University of Pisa
  (see Tutorial Outline)
- *Why and How Should We Explain in AI?,* Stefan Buijsman, TU Delft
  (see Tutorial Outline)
- *Interactive Robot Learning,* Mohamed Chetouani, Sorbonne Université
  (see Tutorial Outline)
- *Multimodal Perception and Interaction with Transformers*, Francois Yvon, Univ Paris Saclay, James Crowley, INRIA and Grenoble Institut Polytechnique
  (see Tutorial Outline)
- *Argumentation in AI (Argumentation 1),* Bettina Fazzinga, ICAR-CNR
  (see Tutorial Outline)
- *Computational Argumentation and Cognitive AI (Argumentation 2),* Emma Dietz, Airbus Central R&T; Antonis Kakas, University of Cyprus; Loizos Michael, Open University of Cyprus
  (see Tutorial Outline)
- Social Simulation for Policy Making, Frank Dignum, Umeå University; Loïs Vanhée, Umeå University; Fabian Lorig, Malmö University
  (see *Tutorial Outline*)
- *Social Artificial Intelligence*, Dino Pedreschi, University of Pisa; Frank Dignum, Umeå University
  (see Tutorial Outline)
- *Introduction to Intelligent User Interfaces (UIs)*, Albrecht Schmidt, LMU Munich; Sven Mayer, LMU Munich; Daniel Buschek, University of Bayreuth
  (see Tutorial Outline)

(HUMANE AI NET logo)

- *Machine Learning With Neural Networks*, James Crowley, INRIA and Grenoble Institut Polytechnique
  (see Tutorial Outline)
- *Deep Learning Methods for Multimodal Human Activity Recognition*, Paul Lukowicz, DFKI/TU Kaiserslautern
- *Learning and Reasoning with Logic Tensor Networks*, Luciano Serafini, Fondazione Bruno Kessler
- *Learning Narrative Frameworks From Multi-Modal Inputs,* Luc Steels, Universitat Pompeu Fabra Barcelona
  (see Tutorial Outline)
- *Law for Computer Scientists*, Mireille Hildebrandt, Vrije Universiteit Brussel; Arno De Bois, Vrije Universiteit Brussel
  (see Tutorial Outline)
- *Writing Science Fiction as An Inspiration for AI Research and Ethics Dissemination*, Carme Torras, UPC
  (see *Tutorial Outline*)

Figure 1: Pictures from the ACAI Summer School

The 4 keynote speakers were:

- Yoshua Bengio, MILA, Quebec (Turing Award Winner)
- Kate Crawford, USC Annenberg
- Yvonne Rogers, UCLIC – UCL Interaction Centre
- Ben Shneiderman of Maryland University

The students were able to present their own work during a Student Poster session as well as participating to the presentation of HumanE AI micro-projects. A student mentoring session was organized letting students to receive feedback and discuss with HumanE AI NET researchers.
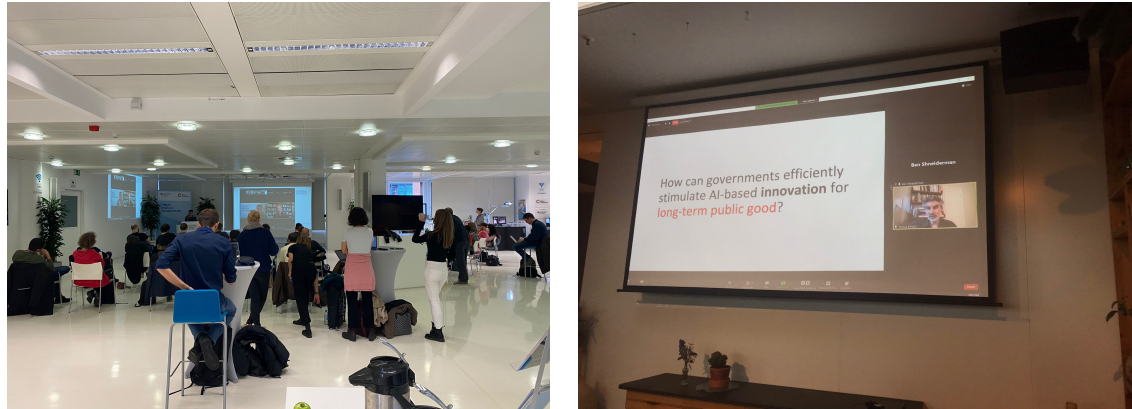
Figure 2: Further pics from the Summer School

The ACAI programme was as follows:

ACAI Schedule 11-14 October, Berlin	Monday, 11/10			Tuesday, 12/10			Wednesday, 13/10			Thursday, 14/10		
9.00 - 9.30	Registration			Ethics and AI: an interdisciplinary approach (Hörsaal HHI)	Machine Learning With Neural Networks (FDT)	social simulation for policy making (3IT)	Law for Computer Scientists (3IT)	Argumentation (FDT)	Operationalising AI Ethics: Conducting Socio-Technical Assessment (Hörsaal HHI)	The Ethics and Metrics of "Successful" AI (Loft)	Learning and Reasoning with Logic Tensor Networks (FDT)	Writing Scifi (3IT)
9.30 - 10.00	Welcome and introduction: Loft am Salzufer											
10.00 - 10.30	Mythical ethical principles for AI and how to operationalise them (Loft)	Deep Learning Methods for Multimodal Human Activity Recognition (3IT)	Social Artificial Intelligence (FDT)									
10.30 - 11.00										Introduction to intelligent UIs (3IT)	Student mentorship meetings: All meet in the Loft, some may then move to FDT	
11.00 - 11.30												
11.30 - 12.00												
12.00 - 12.30	Keynote - Rogers (Loft)											
12.30 - 13.00												
13.00 - 13.30	Lunchbreak			Lunchbreak			Lunchbreak			Lunchbreak		
13.30 - 14.00												
14.00 - 14.30	Why and how should we explain in AI? (Loft)	Multimodal Perception and Interaction with Transformers (3IT)	Social Artificial Intelligence (FDT)	Learning Narrative Frameworks from Multimodal inputs (3IT)	Argumentation (Hörsaal HHI)	Interactive Robot Learning (FDT)	Explainable Machine Learning for Trustworthy AI (FDT)	Cognitive Vision: On Deep Semantics for Explainable Visuospatial Computing (3IT)	Operationalising AI Ethics: Conducting Socio-Technical Assessment (Hörsaal HHI)	HumaneAI-Net Micro-project presentations Loft		
14.30 - 15.00												
15.00 - 15.30												
15.30 - 16.00												
16.00 - 16.30				Keynote - Crawford						Keynote - Shneiderman (16-16.45) - Loft		
16.30 - 17.00												
17.00 - 17.30				EURAI dissertation award						Keynote - Bengio (16.45-17.30) - Loft		
17.30 - 18.00										Panel - Bengio & Shneiderman on HAI - Loft		
18.00 - 18.30	Student posters w/ dinner and drinks: Loft									ACAI2021 Closing reception with finger food and drinks Loft		
18.30 - 19.00												
19.00 - 19.30												
19.30 - 20.00												

3. ATTENDANCE

Due to COVID-19 pandemic, and according to local rules, the physical participation of students was limited to 60 students but online participation was possible (50 students). Most of the students were coming from Europe.

Based on their choices, students were attending different lectures with a physical attendance ranging from 10 to 40.

The students were also able to apply to grants thanks to the support of EuRAI, Artificial Intelligence (Journal) and HumanE AI NET.

4. PUBLICATION OF LECTURES AS PART OF THE SPINGER LNCS TUTORIAL SERIES

The post-proceeding of ACAI 2021 will be published as a Lecture Notes in Artificial Intelligence (LNAI) post-proceedings volume in the Tutorial Subline.

The covers of the publications in the Tutorial Subline are green, dark blue and yellow and often include an illustration. If you have any suggestions for a cover illustration, please let us know. Illustrations may come from the manuscript itself, or elsewhere, provided that all third party rights have been obtained.

The provisory title to the volume is: Advanced course on Human-Centered AI, with editors Mohamed Chetouani, Virginia Dignum, Paul Lukowicz and Carles Sierra?

The chapters content will cover the lecture given at ACAI 2021 and will include:

- a list of further reading publications (around 5-7)

- a short list of learning objectives at the beginning of the chapter

The ACAI 2021 Tutorial book will be accompanied by the video of the lectures.

The content of the lectures will be published by Springer and all slides will be made available as a blueprint for an entire Human Centric AI course that can be adapted by Universities throughout Europe. The Tutorial Book is expected to be published in Spring 2022.