



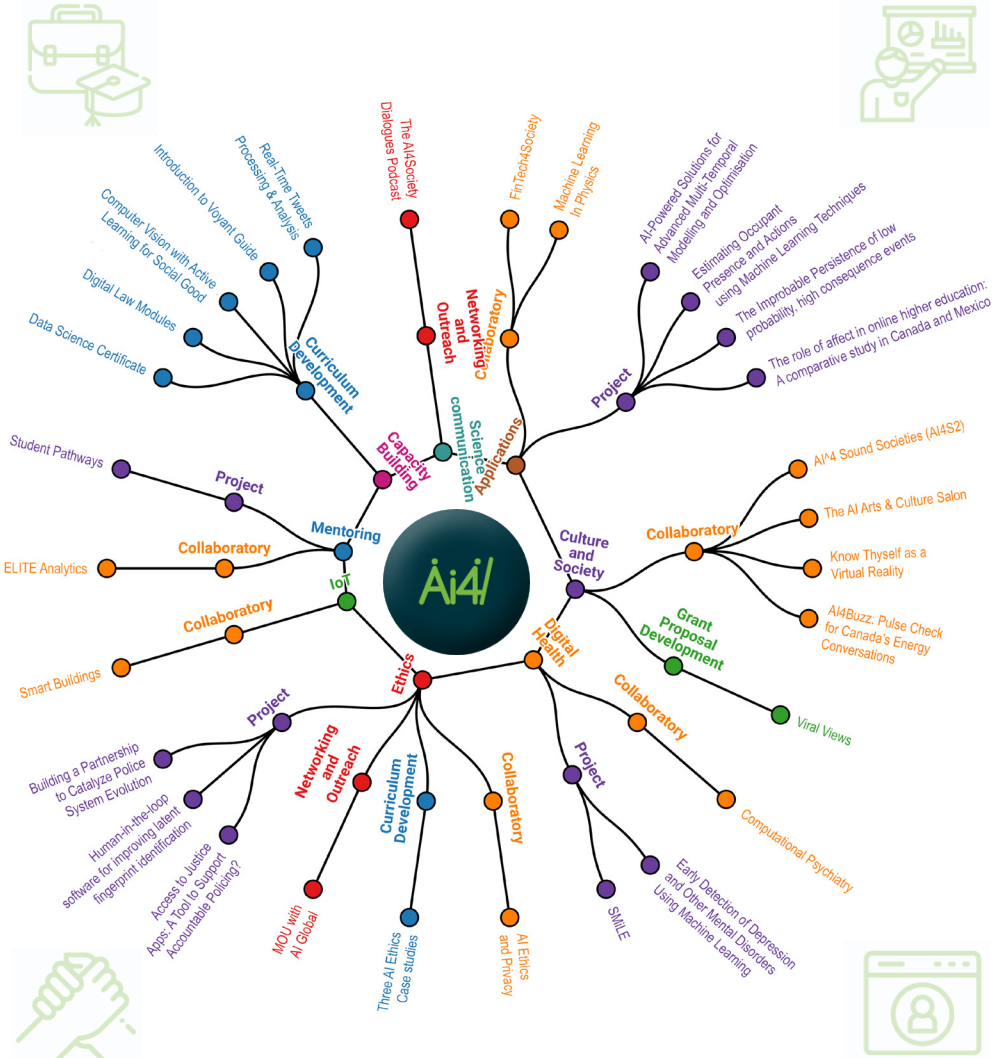
UNIVERSITY OF
ALBERTA

Ai4/Society

2020-2021 Annual Report



Who are we? What do we do?



UNIVERSITY OF ALBERTA AI4SOCIETY

AI4Society is one of the five Signature Areas of Research and Teaching of the University of Alberta, and is focused on Artificial Intelligence, its applications, and its transformative role for our society.

Over the past 30 years, the University of Alberta has been consistently ranked as one of the top three institutions worldwide for AI research and is a lead player in Canada's national AI strategy. Building on this recognition, the goal of **AI4Society** is to stimulate and support interdisciplinary research and teaching initiatives in this field. **AI4Society** provides continuing institutional leadership by developing and coordinating innovative training programs and representing the institution in new initiatives with public, private, and international partners.

OBJECTIVES

- A**mplify the AI-related research activities of the University of Alberta community.
- B**uild learning capacity in Artificial Intelligence, Machine Learning, and Data Science.
- C**ultivate pathways of engagement with the community at large.

PHASES

2019-2021

1 Community-building and consultation activities, to identify and prioritize specific opportunities for new research initiatives and academic programs, aligned with the University's and Faculties' strategic plans.

2021-2023

2 Expansion of current activities, and engagement with for-profit and community partners at the local and national and international levels.

2023-2025

3 Establishment of a self-sustaining entity within the University of Alberta.

People

AI4Society is a community of scholars working towards harnessing the power of Artificial Intelligence
For the Public Good!



AI4Society TEAM



Dr. Eleni Stroulia
Director
Professor, Computing Science
director@forum.ai4society.ca



Dr. Geoffrey Rockwell
Associate Director
Professor, Philosophy / Digital Humanities
Director - Kule Institute for Advanced Study
director@forum.ai4society.ca



Dr. Nicolás Arnáez
Project Coordinator
Assistant Lecturer, Faculty of Arts - Music Department
ai4s@ualberta.ca



170 Researchers



11 Faculties

INSTITUTIONS we collaborate with

- University of Calgary
- Queen's University
- University of Regina
- University of Aberdeen
- Tecnológico de Monterrey
- The University of Aizu
- University of the Arts London
- Weizenbaum Institut
- Center for Digital Ethics & Policy
- Responsible Artificial Intelligence Institute
- The Canadian Energy and Climate Nexus
- City of Edmonton
- Edmonton Police Service
- Sen Sound
- Lisnen



MEMBERS

STUDENTS GROUPS we collaborate with



University of Alberta
Aerial Robotics Group



Undergraduate Artificial
Intelligence Society



Digital Law &
Innovation Society



ADA



Artificial Intelligence in
Medicine Student Society



Youreka Canada



NeurAlbertaTech



Students for Machine
Learning in Business



iGeek

Research Initiatives

Led by **AI4Society** members, interdisciplinary teams investigate AI-related challenges

Computational Psychiatry



Bo Cao



Russell Greiner

Dursun, Serdar
Greenshaw, Andy
Kalmady, Sunil
Stroulia, Eleni
Zaiane, Osmar

FoMD - Science

Scientists and clinicians working in the field of **machine learning for mental health**, developing models for supporting the diagnosis and treatment of mental-health conditions, from different types of data, including EMR and lab data.



The AI Arts & Culture Salon



Jonathan Cohn

Denier, Nicole
Ensslin, Astrid
Evans, Daniel
Guzdial, Matthew
Mookerjee, Sourayan
Oliver, Marilène
Rak, Julie

Arts - Science

A monthly salon discussing current and emerging **AI Arts & Culture** research. The goal of the group is to foster a congenial and critical culture at the UA around the role of AI in the wider world.

Know Thyself as a Virtual Reality



Marilène Oliver

Boulanger, Pierre
Ensslin, Astrid
Hindle, Abram
Jaremko, Jacob
Kawchuk, Greg
Maeda, Nathaniel
McTavish, Lianne
Casini, Silvia
Cohn, Jonathan
Ferguson-Pell, Martin
Fichtinger, Gabor
Kleib, Manal
Ogbogu, Ubaka
Thompson, Richard

Arts - Science - FoMD - Law Rehabilitation - Nursing

An interdisciplinary project that focuses on the ethics and aesthetics of the use of **medical data and virtual reality for creating art**.

Machine Learning In Physics



Mirko van der Baan

Guzdial, Matthew
Leung, Juliana
Sacchi, Mauricio

Science - Engineering

Comparing the advantages and shortcomings of **data-driven machine-learning approaches against deterministic algorithms** in the Physical and Engineering Sciences, and investigating the potential for hybrid, physics-informed machine-learning algorithms, or machine-learning enhanced deterministic modeling.

AI4Buzz: Pulse Check for Canada's Energy Conversations



Lianne Lefsrud

Barbosa, Denilson
Gehman, Joel
Stroulia, Eleni
Hollis, Geoff
Boucher, Jean-Christophe
Gutierrez Gutierrez, Candelario

McQuinn, Brian
Westbury, Chris
Winter, Jennifer
Millia, David

Engineering - Science Business

In the face of innovation, energy-policy, and environmental challenges, the public's trust in their institutions – government, business, and media – is rapidly eroding; the group examines methodologies for **inferring the public's values and opinions from social media**.

Research Initiatives

Led by **AI4Society** members, interdisciplinary teams investigate AI-related challenges

Smart Buildings



Eleni Stroulia

Ardakanian, Omid
Guzdial, Matthew
Hegde, Nidhi
Musilek, Petr
Nikolaidis, Ioanis
Oliver, Marilène
Taylor, Matthew
White, Martha

Science - Engineering - Arts

The digitization of building information is transforming the way professionals design, construct and operate facilities and the way occupants interact with them. The group is collaborating towards the development of a **smart-building living lab** on campus.



AI Ethics and Privacy



Nidhi Hegde



Geoffrey Rockwell

Adams, Cathy
Quamen, Harvey
Verdini, Paolo
Yoldas, Tugba
Abu-Laban, Yasmeen
Baumgart, Daniel
Berendt, Bettina
Bielby, Jared
Chee, Florence
Farnel, Sharon
Goodman, Karen
Harder, Geoff
Young Leslie, Heather

Science - Arts Education - FoMD

Coordinating research and education-related initiatives around **privacy, fairness and ethics** issues related to big data and artificial intelligence.

FinTech4Society



Christoph Frei

Avdiss, Efstathios
Cote, Philippe
Hegde, Nidhi
Scholnick, Barry

Science - Business

A team of academics investigating what AI can bring to the emerging field of **FinTech**, to improve financial services for consumers.



AI4S^2 Sound Societies (AI4S2)



Michael Frishkopf

Ensslin, Astrid
Hindle, Abram
Oliver, Marilène
Sturtevant, Nathan
Abraham, Eyra
Acharya, Hernish
Adeeb, Samer
Ahmad, Rafiq
Brulotte, Tiffany
Cohen, Michael



Scott Smallwood

Fiebrink, Rebecca
Johnston, Lucinda
Kutsogiannis, Jim
Li, Xinming
Meghani, Shaista
Mulyk, Greg
Papathanasoglou, Elisavet
Sen, Yoko
Sturdy, Christopher
Westover, Lindsey

Arts - Science Engineering - FoMD

AI-driven systems for adaptive soundscapes: linking people, environments, and algorithms in communications loops, using feedback to customize an auditory environment enhancing inhabitants' social wellbeing.

ELITE Analytics

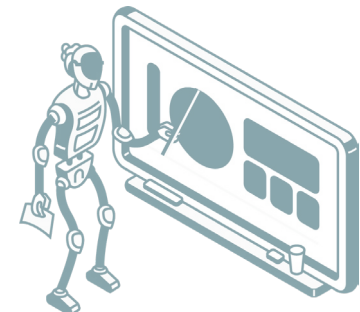


André McDonald

Stroulia, Eleni

Engineering - Science

Developing a **data-driven evaluation methodology** for mentoring programs, specially tailored to under-represented populations, such as the ELITE program.





Independently, and in collaboration with partners, **AI4Society** has organized a variety of events to inform the public on the relevance of AI in all aspects of our society

UNIVERSITY OF ALBERTA INTERNATIONAL

May 20, 2020
1:30 PM MDT

**Online Information Session
on Humboldt Foundation Funding Opportunities
for Junior, Mid-Career and Senior Researchers**

Presenters:

Dr. Xiaoting Li
University of Alberta
Humboldt Fellow

Dr. Chung-Wai Chow
University of Toronto
President of the Humboldt Association Canada

Dr. Meghan Riddell
University of Alberta
Humboldt Fellow

For More Information and to Register, Click Here

**UNIVERSITY OF ALBERTA
AI4SOCIETY**

**Introduction: AI4Society, a
Signature Research Area**

Join AI4Society, University of Alberta's Signature Research Area on artificial intelligence and its applications, for an online webinar to discover who we are. We will also feature collaboratories, one of our initiatives to promote interdisciplinary research activities involving large research teams across campus.

**Date: September 25th, 2020
Time: 9:00 to 10:00am (MDT)
Register: tinyurl.com/y4eb27oz**

ai4s@ualberta.ca
For more information, visit www.ai4society.ca

"Artificial Intelligence for Information Accessibility- AI4IA"
Conference on the International Day for Universal Access to Information (IDUAI)

The **UNESCO Information for All Programme (IFAP)**, Working Group on Information Accessibility (WGIA), is hosting an online one-day conference on **September 28, 2020 beginning at 09h00 Mountain Time**. The theme of the conference will be Artificial Intelligence for Information Accessibility (AI4IA). The conference is being organized to commemorate the International Day for Universal Access to Information (IDUAI) 2020 under the global theme, "Saving Lives, Building Trust, Bringing Hope".

This event is hosted in collaboration with the **Kyle Institute for Advanced Studies (KIAS)** and the **AI for Society (AIS)**, both at the University of Alberta, Canada, and the **International Center for Information Ethics (ICIE)**, under the auspices of the UNESCO Caribbean Office and the UNESCO Regional Office for Southern Africa.

We invite you to join us on the 28th to listen to speakers from around the world discuss how AI can be made inclusive, thereby enabling the widest cross-section of society.

You can find out more information and register at <https://www.icie.org/inclusive-ai>

“AI can be very beneficial to society, but if abused it can also be very harmful.”

We need to understand the barriers to accessing AI and ways to make AI more inclusive and safe, thereby enabling the widest cross-section of society.”

ARTIFICIAL INTELLIGENCE FOR INFORMATION ACCESSIBILITY EVENT

28 SEPTEMBER 2020

[HTTPS://WWW.ICIE-ORG/INCLUSIVE-AI](https://www.icie.org/inclusive-ai) @ICIE_IRIE

Reflections on The Indigenous Protocol & Artificial Intelligence Position Paper

Guest Speaker: **Dr. Jason Lewis**
When: **October 28, 2020 @ 4:00pm MST**

With A Response From:
Dr. Maggie Spivey-Faulkner

Register at: <https://tinyurl.com/y6batoh7>

UNIVERSITY OF ALBERTA AI4SOCIETY **KIAS** **Kyle Institute for Advanced Study** **UNIVERSITY OF ALBERTA SITUATED KNOWLEDGES, INDIGENOUS PEOPLES AND PLACE**

**Our University, Our Work:
Artificial Intelligence Around Campus**

September 25, 2020 - 3:00 to 4:15 pm

Dr. Okan Bulut
Educational Psychology

Dr. Xiaoting Li
East Asian Studies

Dr. Li Cheng
Electrical and Computer Engineering

Dr. Jacob Jaremko
Radiology and Diagnostic Imaging

Dr. Vinay Prasad
Chemical and Materials Engineering

Dr. Noah Castelo
MBEL

Dr. Adriana Rios Rincon
Occupational Therapy

Dr. Matthew Guzdial
Computing Science

UNIVERSITY OF ALBERTA AI4SOCIETY

**SIGNATURE AREA PANEL
AI 4 Society**

UNIVERSITY OF ALBERTA AI4SOCIETY **Sustainability Awareness Week**
October 26-30, 2020

OCTOBER 27, 2020

**Sun, Fire and Water:
Optimizing Climate Change Response with AI**

Independently, and in collaboration with partners, **AI4Society** has organized a variety of events to inform the public on the relevance of AI in all aspects of our society

UNIVERSITY OF ALBERTA
AI4SOCIETY

AI4Society Dialogues Series

Dialogue on Privacy Legislation

The Trudeau government introduced new privacy legislation in November of 2020. What does this new legislation mean for Canadians? How will change how our data is handled and how might it change the way we experience digital spaces?

SHORT PRESENTATIONS by
Michael McNally, James Franks, Steven Penney, Jonathan Cohn,
Nicole Denier, Nidhi Hegde, Alla Konnikov.

Followed by an open discussion on the topic

JOIN US
January 21st from 4:00 pm

Log in on Meet
meet.google.com/aes-nyxm-osx

UNIVERSITY OF ALBERTA
AI4SOCIETY

AI4Society Lecture Series

Using AI to Teach AI

"When life gives you lemons, make lemonade" is a familiar proverb. Well, life has given us COVID-19 and forced almost all education online. This is a perfect opportunity to use AI to foster online education.

An online lecture by Professor **Ashok K. Goel**
(School of Interactive Computing, Georgia Institute of Technology)

January 22nd, 2021 | 2:00 pm - 3:30pm

Log in on Zoom
Meeting ID: 941 2997 9487
Passcode: 627777

More information? Contact us: ai4s@ualberta.ca

UNIVERSITY OF ALBERTA
AI4SOCIETY

Center for Digital Ethics & Policy
weizenbaum institut

The Ethics Dialogues

Dialogue on Surveillance and Carcerality

Special Dialogue Guests
Elizabeth Adams
Chief AI Ethics Advisor Paragon | 10x Key Contributor of Responsible 3C on AI | Stanford University Fellow Race & Technology
Kevin D. Haggerty
University of Alberta Professor / Chair of Arts & Society Department / Canada Research Chair / KPMG Research Fellow / Editor of the Canadian Journal of Sociology

February 24th
9:00am MST | 10:00am CST | 5:00pm Berlin

To join the meeting, please register here:
<https://forms.ualberta.ca/dialogue-on-surveillance-and-carcerality-24134343434>

UPCOMING EVENTS
Dialogue on Whistleblower Protections - Can organizations self-regulate? - March 17th: 9:00am
9:00am MST | 10:00am CST | 4:00pm Berlin
Symposium on Ethics in the Age of Smart Systems - April 19-21
9:00am MST | 10:00am CST | 5:00pm Berlin

UNIVERSITY OF ALBERTA
AI4SOCIETY

Center for Digital Ethics & Policy
weizenbaum institut

The Ethics Dialogues

Dialogue on the Ethics of Contact Tracing

Keynote Speaker: **Rainer Rehak**
Doctoral candidate in the research group "Quantification and Social Regulation" of the Weizenbaum-Institute for the Networked Society

February 3rd
9:00am MST | 10:00am CST | 5:00pm Berlin

To join the meeting, please fill in this form:
<https://forms.ualberta.ca/ethics-of-contact-tracing-03134343434>

UPCOMING EVENTS
Dialogue on Surveillance and Carcerality - February 24th
9:00am MST | 10:00am CST | 5:00pm Berlin
Dialogue on Whistleblower Protections - Can organizations self-regulate? - March 17th: 9:00am
9:00am MST | 10:00am CST | 4:00pm Berlin
Symposium on Ethics in the Age of Smart Systems - April 19-21
9:00am MST | 10:00am CST | 5:00pm Berlin

UNIVERSITY OF ALBERTA
AI4SOCIETY

Center for Digital Ethics & Policy
weizenbaum institut

The Ethics Dialogues

Dialogue on Whistleblower Protections

Can organizations self-regulate?

Special Dialogue Guests
Rita de Sousa Costa
TMT Associate at PwM, Portugal
Inês de Castro Ruivo
Data Protection Officer at Santander Bank, Portugal
Tim Hannigan
University of Alberta Assistant Professor / Department of Strategy Entrepreneurship and Management / Coordinator of the Data Research Group

March 17th
9:00am MST | 10:00am CST | 4:00pm Berlin | 3:00pm Lisbon

To join the meeting, please register here:
<https://forms.ualberta.ca/dialogue-on-whistleblower-protections-16134343434>

UPCOMING EVENTS
Symposium on Ethics in the Age of Smart Systems - April 19-21
9:00am MST | 10:00am CST | 5:00pm Berlin

DIGITAL LAW FORUM

COVID Challenges & Beyond

February 24 & March 3

Co-presented by the
Faculty of Law & AI4Society

UNIVERSITY OF ALBERTA
DIGITAL LAW & INNOVATION SOCIETY



Ethics in the Age of Smart Systems

10th Annual Symposium

April 19th, 20th, 21st, 2021 - 9am MDT | 10am CDT | 5pm CEST

Registration is now open, receive login information by signing in at:
<https://traffmforms.org/ethics-in-the-age-of-smart-systems-symposium.1417301485>

KEYNOTE speakers

Veena Dubal
The New Racial Wage Code

Virginia Dignum
Responsible AI

Rafael Capurro
Smart Living in the Digital Age

PRESENTATIONS by

- ♦ Petra Molnar & Jan Tobias Muehlberg
- ♦ Stefan Schiffer & Bettina Berendt
- ♦ Tommaso Crepax & Jan Tobias Muehlberg
- ♦ Frejya Van Den Boom
- ♦ Kevin Baum & Sarah Stertz
- ♦ Cathy Adams, Patti Pente, Geoffrey Rockwell, and Gillian Lernermeyer

ORGANIZED by

weizenbaum
institut

AI4 Society

ECODE100

Center for Digital Ethics & Policy

ARTALFACTS



LASER
LEONARDO ART SCIENCE
EVENING RENAISSANCE

INNOVATION

SCIENCE

ART

ArtAlFACTS: Co-Creation with Non-Human Systems by Dana Dal Bo

Presentation - noon MDT 3rd June 2021

Workshop - 10am MDT 4th June 2021

Hosted on Zoom (please register for link)

The Leonardo Art Science Evening Renaissance (LASER) series features short lectures and presentations of art, science and technology. Founded in 2008 by LASER Chair Piero Scaruffi on behalf of Leonardo/IASI, LASER Talks are now presented at various venues the U.S. and internationally. Each evening includes presentations of artistic projects, news from the arts, and time for casual socializing/previewing.

LEARN MORE leonardo.info/laser







ArtAlFACTS: Co-Creation with Non-Human Systems

Recent advances in generative AI are rapidly blurring the lines between human and machine creation. Deep-fakes are being produced and distributed at an alarming pace with history so dramatic it is increasingly difficult to distinguish what is 'real' and what is machine generated. In this presentation and workshop Dana Dal Bo will consider how we might "co-create" with these systems and explore machine vision algorithms at a catalyst for artistic expression.


Dana Dal Bo deftly bounces between mediums: textiles, photography, video, performance, and the net. This works as an artist on a number of multidisciplinary research teams, which she refers to as co-creators that create art, science, and medicine including Hybrid Bodies which explores the phenomenological aspects of organ transplant and donation, and Space Tango where as Artist in Residence she is researching the AI, non-territorial colonization and the supernatural. Dal Bo's work beckons a reductive, speculative future that is grounded in an eerie pan-optical present.











The poster features a green background with a white circle on the left containing a line drawing of a person in a spacesuit pointing at a large screen. To the right, a black sign on a stand reads "AI Arts & Cultures Salon Workshop Series". Below this, the names and topics of four speakers are listed, each followed by their affiliation, date, and time. At the bottom, two instructions are given: "Prepare yourself by reading selected material ahead of time" and "Download this material from here:", followed by a URL. A small "Asi Society" logo is in the bottom right corner.

**AI Arts & Cultures Salon
Workshop Series**

Michelle Gorea (Queens) | January 29th - 3:00pm
ON how digital media constructs youth's visual transitions

Andre Brock (Georgia Tech) | March 1st - 11:00am
ON Distributing Blackness

Ted Striphas (U Colorado, Boulder) | March 12th - 3:00pm
ON Algorithmic Culture

Cait McKinney (SFU) | March 30th - 2:00pm
ON Information Activism

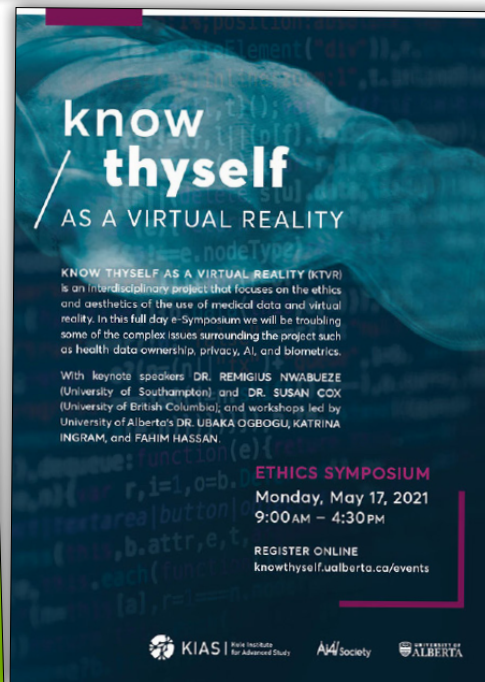
Lev Manovich (CUNY) | April 6th - 11:00am
ON AI Culture

Sun Ha Hong (SFU) | April 20th - 3:00pm
ON "Fact Signaling" and disinformation in AI boosterism

Prepare yourself by reading selected material ahead of time

Download this material from here:
<https://www.asiartsalon.com/wp-content/uploads/2023/01/Workshop-materials.pdf>

Asi
Society



know thyself

AS A VIRTUAL REALITY




KNOW THYSELF AS A VIRTUAL REALITY (KTVRI) is an interdisciplinary project that focuses on the ethics and aesthetics of the use of medical data and virtual reality. In this full day e-Symposium we will be bringing some of the complex issues surrounding the project such as health data ownership, privacy, AI, and biometrics.

With keynote speakers **DR. REMIGIUS NNABUEZE** (University of Southampton) and **DR. SUSAN COX** (University of British Columbia), and workshops led by University of Alberta's **DR. UBAKA OGBOGU**, **KATRINA INGRAM**, and **FAHIM HASSAN**.

ETHICS SYMPOSIUM

Monday, May 17, 2021
9:00AM – 4:30PM

REGISTER ONLINE
knowthyself.ualberta.ca/events

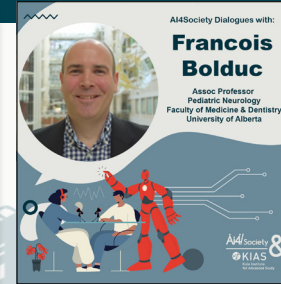
 **KIAS** | Knowledge Institute for Advanced Study  **A4 Society**  **UNIVERSITY OF ALBERTA**



PODCAST



The first season of **AI4Society Dialogues** featured 10 episodes where AI researchers shared their work.



International Engagement

- MOU with the Responsible AI Institute
- Proposal development to International Development Research Centre: IDRC with the University for Development Studies, Tamale, Ghana
- Dr. Stroulia serves on the Advisory committee of the Technology Innovation Hub at IIT Indore
- Dr. Rockwell coorganized the Ethics Dialogues in conjunction with the Center for Digital Ethics and Policy (CDEP) at Loyola University Chicago and the Weizenbaum Institute for the Networked Society in Berlin
- Participation to the Smart City Borderless 2020, organized by SEST Gobierno de Baja California and ITBaja Cluster, Tijuana, Mexico
- Keynote, by Dr. Rockwell, on Analyzing Health Discourse for Digital Wellness at the International Conference on Accelerating Actions and Promoting Digital Wellness in the context of Artificial Intelligence, University of Hyderabad, India.
- Co-hosting **Replaying Japan 2021, Artificial Intelligence for Information Accessibility 2020, Conference on the International Day for Universal Access to Information 2020.**

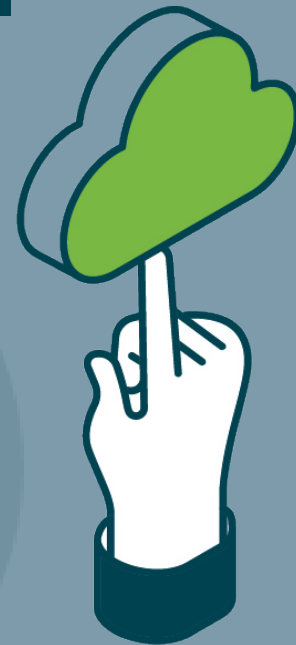
Research-networking workshops

- From Social Platforms Chatter to Information
 - Tec de Monterrey, Mexico (ITESM)
 - Dialogue on Privacy Legislation
 - Edmonton Police Service (EPS)

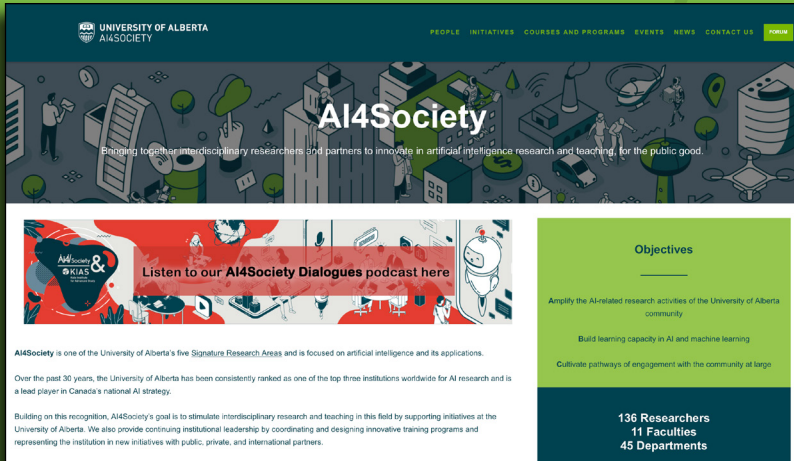
AI4Society engages with academic institutions across the world, through a range of diverse joint activities.

Networking and Outreach

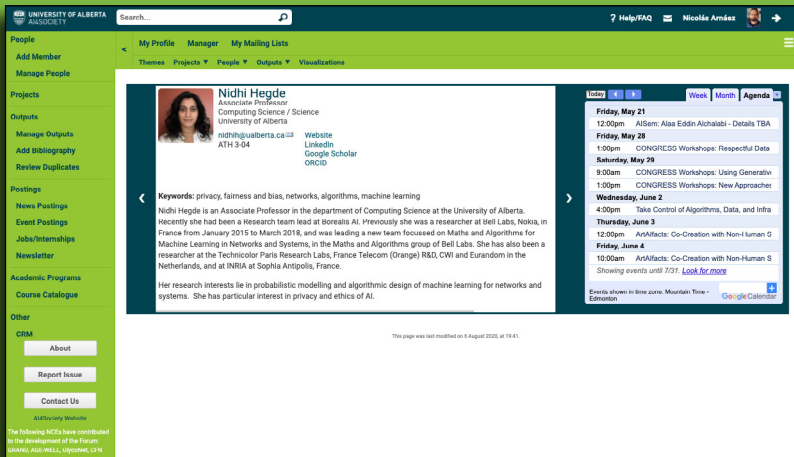
- 1** We have designed an interdisciplinary data-science certificate, including three new courses, currently under development by CS instructors with support from AI4Society. A BSc program on Data Science is also under development.
- 2** We have developed a suite of reusable courseware materials:
 1. Learning Text Analysis with Voyant (Bennett Kuwan Tchoh)
 2. Computer Vision with Active Learning for Social Good (Rohan Nuttall & Hager Radi)
 3. Three AI Ethics Case studies (Katrina Regan-Ingram)
 4. Real-Time Tweets Processing & Analysis (Candelario Gutierrez Gutierrez)
- 3** We are supporting the development of two micro-credential courses, by the Digital Law Innovation society with the Faculty of Extension.
- 4** In collaboration with SKIPP, we have developed three workshops to be run during Congress 2021 which is being hosted by the UofA:
 - a. Respectful Data Management
 - b. Using Generative AI techniques in the Arts and Humanities
 - c. Developing New Approaches to AI.



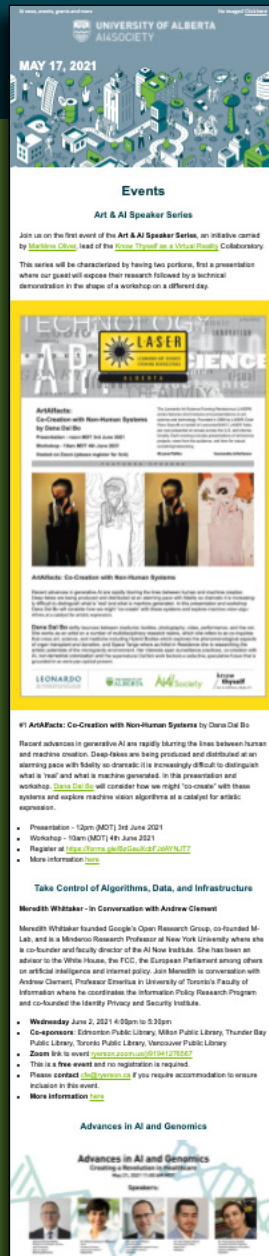
Online presence



Website



Forum

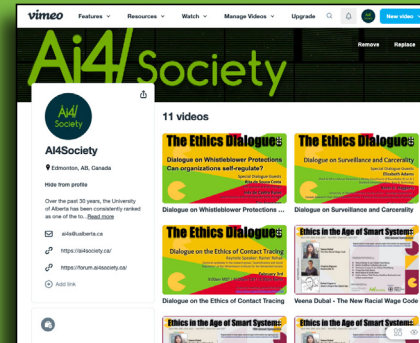


Bi-weekly newsletter

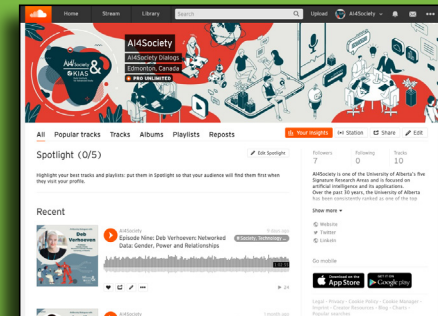
We connect with our members and the public through multiple channels



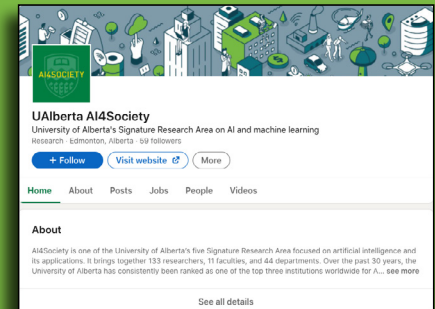
Twitter



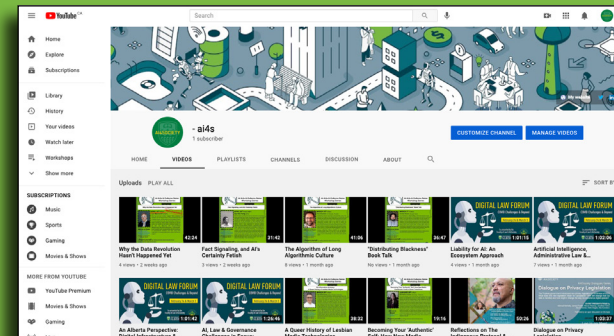
Vimeo



Soundcloud



LinkedIn



Youtube



Future Plans



We will continue working with our established projects and collaboratories, providing project-management and communications support, and supporting the development of their grant-application submissions.

We will identify new opportunities for building interdisciplinary teams, with shared research objectives for development of AI solutions in different domains, and the study of the implications of these solutions to our society.

We will support existing EDI initiatives on campus and apply data-science methods to evaluate the effectiveness of different interventions on under-represented groups.

We will establish meaningful metrics, in consultation with our community and campus-wide academic leaders, to systematically evaluate our activities, including, but not limited to, the following:

1. grant applications submitted/successful - funds requested/obtained
2. coverage of disciplines (for all our activities)
3. involvement and reach of the initiatives/events organized (local, regional, national, international)
4. event/course registrations and attendance



HOW TO JOIN

contact us at ai4s@ualberta.ca