

InterPARES Trust AI: Webinar 2

Project organization. New partners

Co-Directors: Luciana Duranti & Muhammad Abdul-Mageed

Project Coordinator: Corinne Rogers

Introduction to ITrustAI

July 14, 2021, 10:00 AM PDT

Agenda

- Welcome and details for today
- Focus on AI - Muhammad Abdul-Mageed
- Overview of new partners
- Hearing from new partners and researchers
 - Lyle Ungar, Isto Huvila, Emilio Suarez Gonzalez, Tania Cenquitelli
- Organizational structure
- Working Groups - descriptions and examples
- Wrap-up and outline of Webinar 3



InterPARES Trust AI: Webinar 2

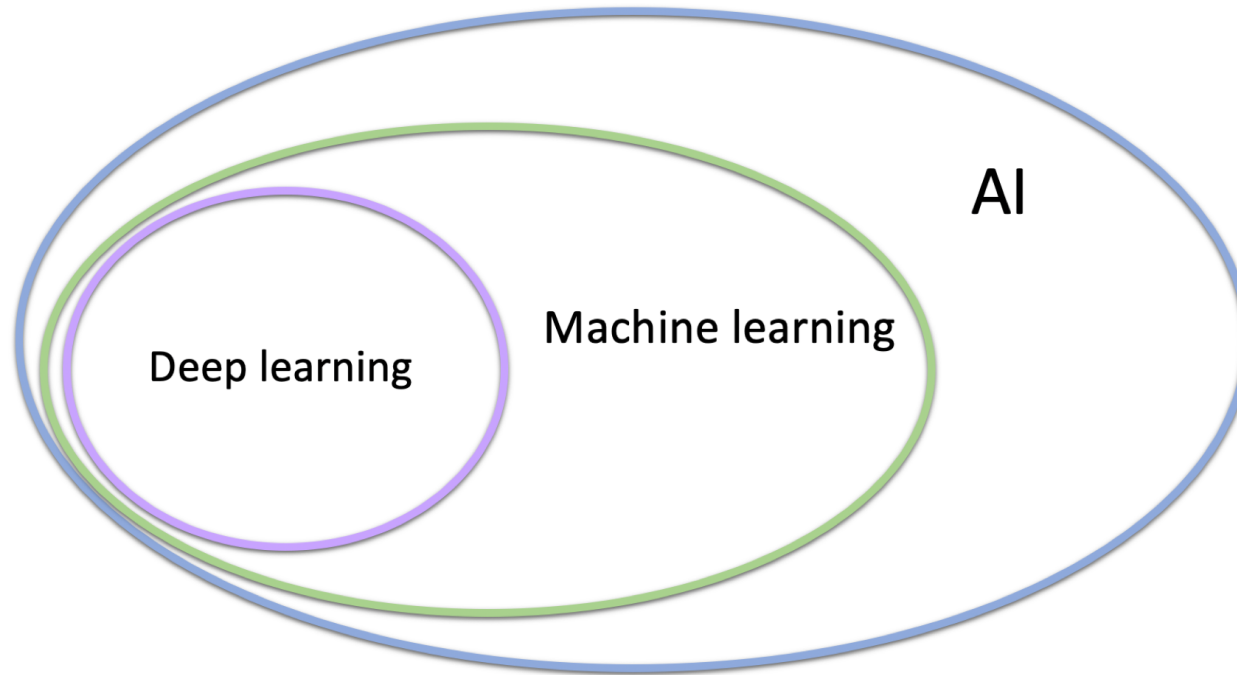
Muhammad Abdul-Mageed
Deep Learning & NLP Lab
The University of British Columbia

ITrustAI

July 14, 2021

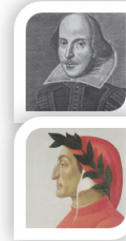


Artificial Intelligence

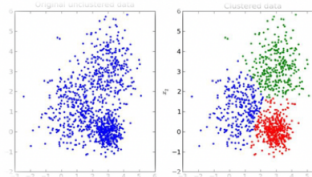


Supervision

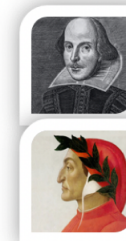
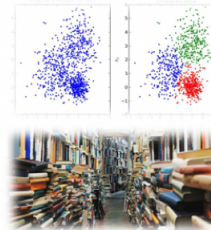
- **Supervised**



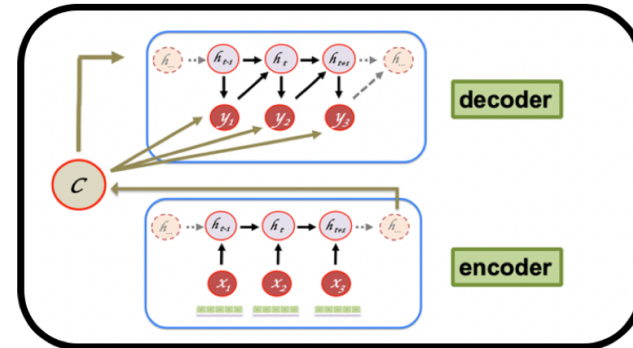
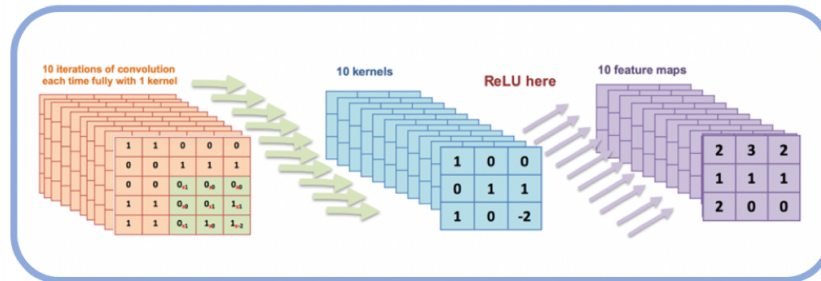
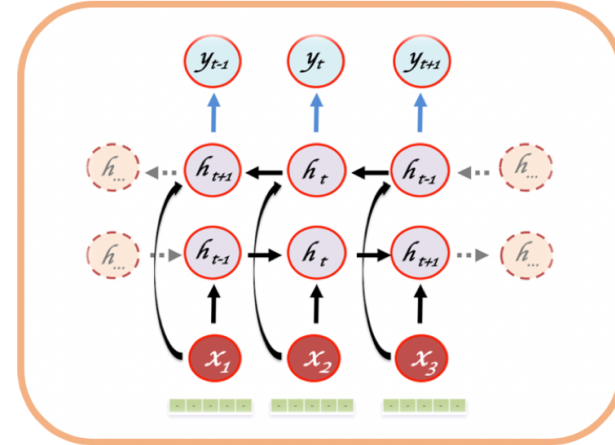
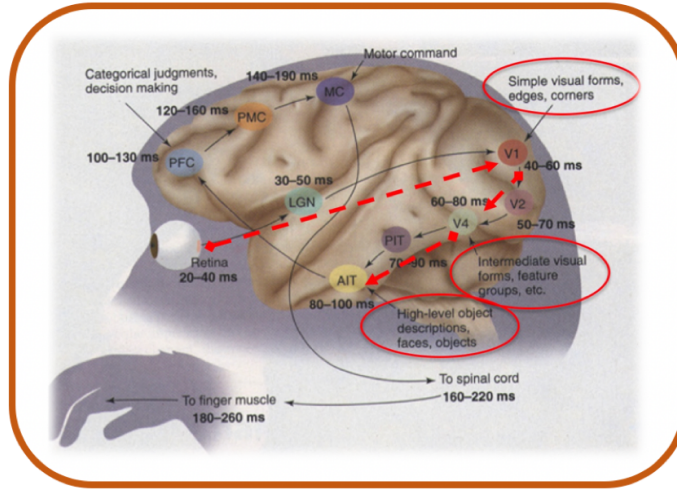
- **Unsupervised**



- **Semi-supervised**



Deep Learning



Transformer

Attention Is All You Need

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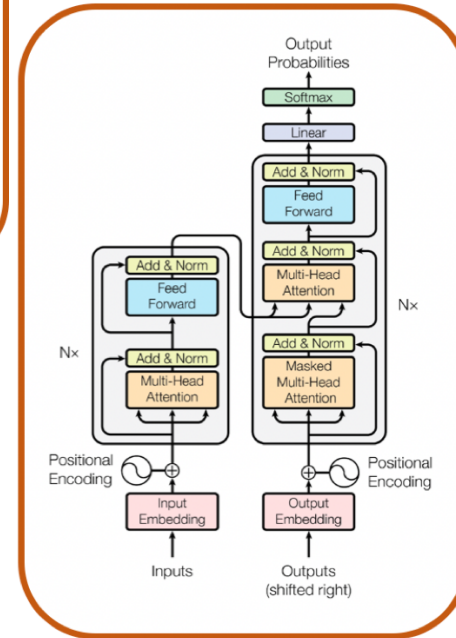
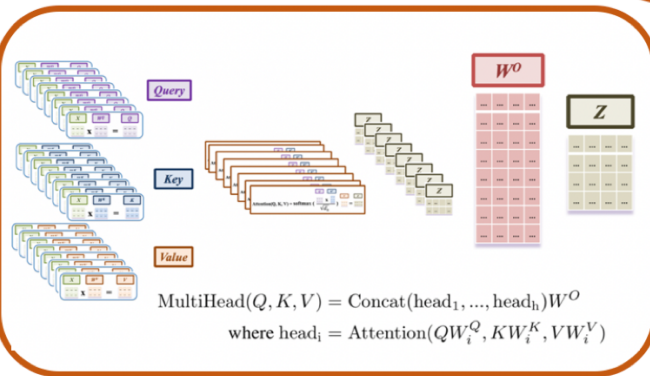
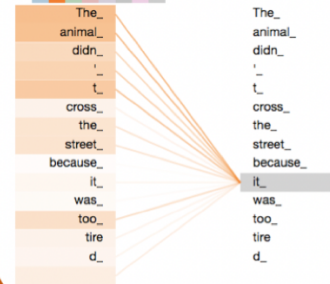
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Layer: 5 Attention: Input - Input



Text-to-Text Transformer

Exploring the Limits of Transfer Learning with a Unified Text-to-Text Transformer

Colin Raffel*

Noam Shazeer*

Adam Roberts*

Katherine Lee*

Sharan Narang

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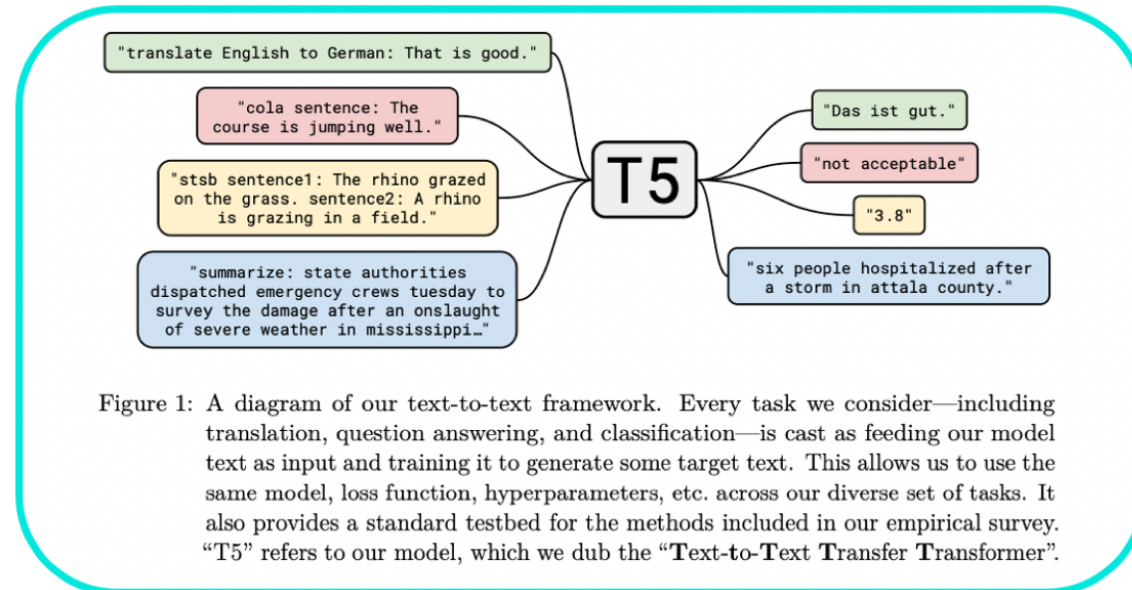
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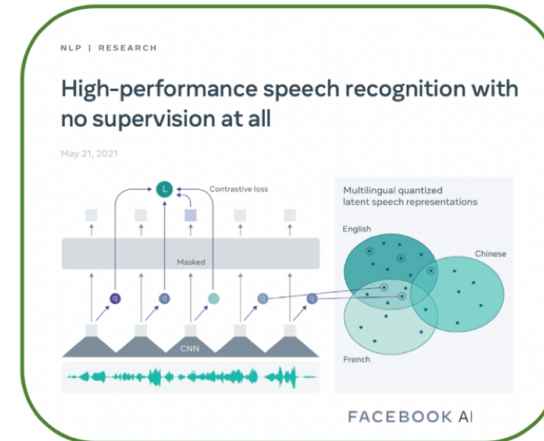
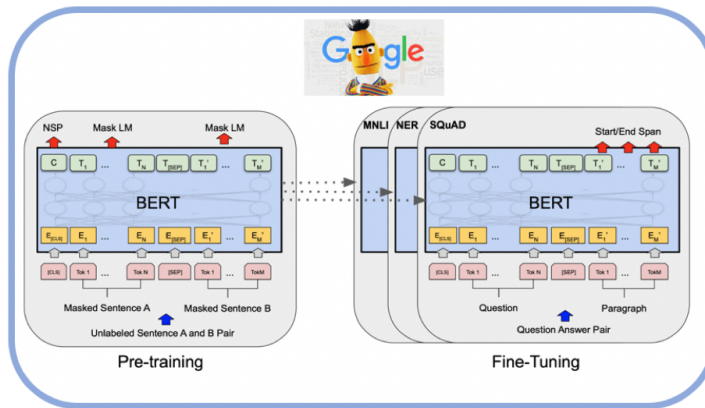
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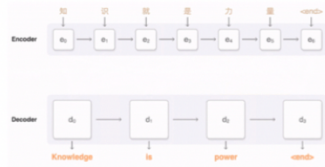
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Self-Supervision



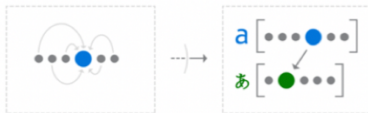
Machine Translation



Zero-shot

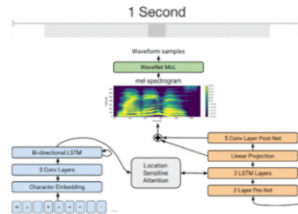


<https://research.googleblog.com/>



<https://translator.microsoft.com/help/articles/neural/>

Speech



<https://research.googleblog.com/>

Image Captioning

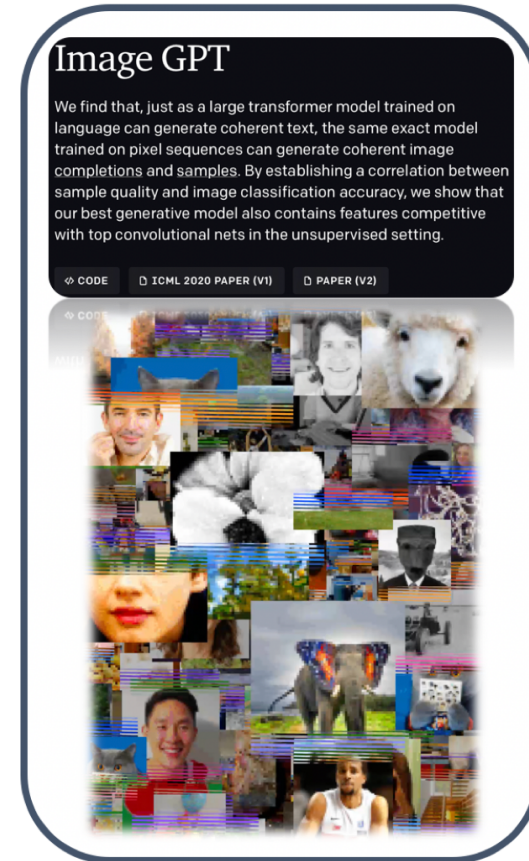


[Microsoft Research: He et al., 2015]



<https://research.googleblog.com/>

Generative Models (I)



Generative Models (II)

DALL·E: Creating Images from Text

We've trained a neural network called DALL·E that creates images from text captions for a wide range of concepts expressible in natural language.

TEXT PROMPT an illustration of a baby daikon radish in a tutu walking a dog

AI-GENERATED IMAGES



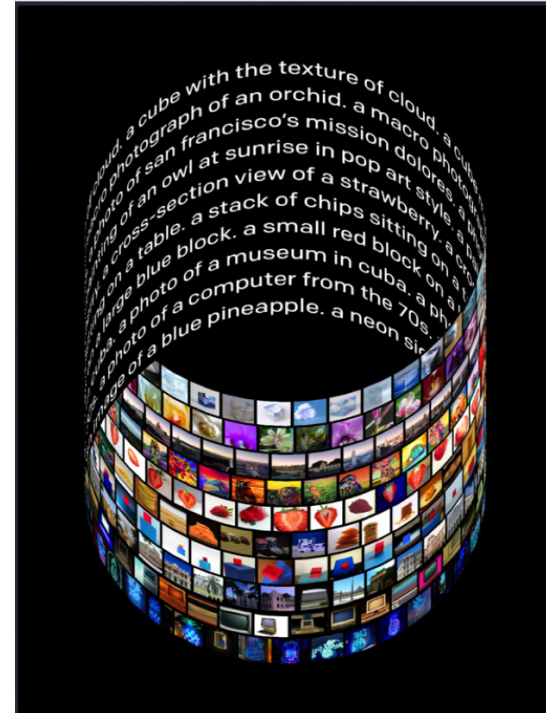
Edit prompt or view more images +

TEXT PROMPT an armchair in the shape of an avocado. . . .

AI-GENERATED IMAGES



Edit prompt or view more images +



Central Question



- Can we develop **AI systems** for carrying out **records and archives** functions *competently* and *efficiently* while maintaining the *nature* and *trustworthiness* of the records?

AI Decisions: Challenges (I)

- **Authenticity** (of transformed content)
- **Bias** (reflects or amplifies bias in training data)
- **Fairness** (disproportionate impact on some groups)
- **Inconclusivity** (of outcomes, evidence, etc.)



AI Decisions: Challenges (II)

- **Interpretability**
- **Privacy**
- **Traceability & Accountability** (could be hard to assign responsibility)
- **Transparency**



Examples of Past Work

- **Recommendation systems** that connect relevant images to digitized text, by using handwritten text recognition (to make old documents searchable)
- **Visualization of the types of data stored on disk images** (using a combination of Named Entity Recognition, entity relations tools, and topic modeling)
- **Chatbots** that emulate human conversation through voice commands or text chats or both (to help knowledge seekers find connected information)
- ...

- Relying on existing tools is **limiting**
- Off-the-shelf tools may be **problematic**



- What **archives** could look like with wider application of AI?
- How can **archival theory** inform creation of AI tools?

Acknowledgement (+SSHRC PG)



New partners

Univ. Politecnica delle Marche

University of Bologna

Politecnico di Torino

State Archives of Venice

State Archives of Milan

State Archives of Turin

Central State Archive, Italy

European Free Trade Association

Historical Archives of the EU

SONY Computer Science Laboratories

Univ. Autònoma de Barcelona

Sweden Transportation Ministry

Tampere University

Uppsala University

Sorbonne - Abu Dhabi

Anatolia Agency

Int. Federation of Red Cross Archives

Turkish Red Crescent Society

National Archives of Slovenia

National Library and Archives of Iran

Collabware

Ingenium Canada

MONOVA

UBC Okanagan

Univ. of Pennsylvania

City University of New York

Big Data for Smart Society (GATE)

El Colegio de Mexico

University of Havana

National Archives of Chile

Univ. Federal do Rio Grande do Sul

Beijing Union University

Tianjin University

Ghana Institute of Management and Administration

InterPARES
TrustRI



New partners, new voices

Lyle Ungar - University of Pennsylvania

Isto Huvila - Uppsala University

Emilio Suarez Gonzalez - University of Havana

Tania Cerquitelli - Polytechnic of Turin

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Organizational structure

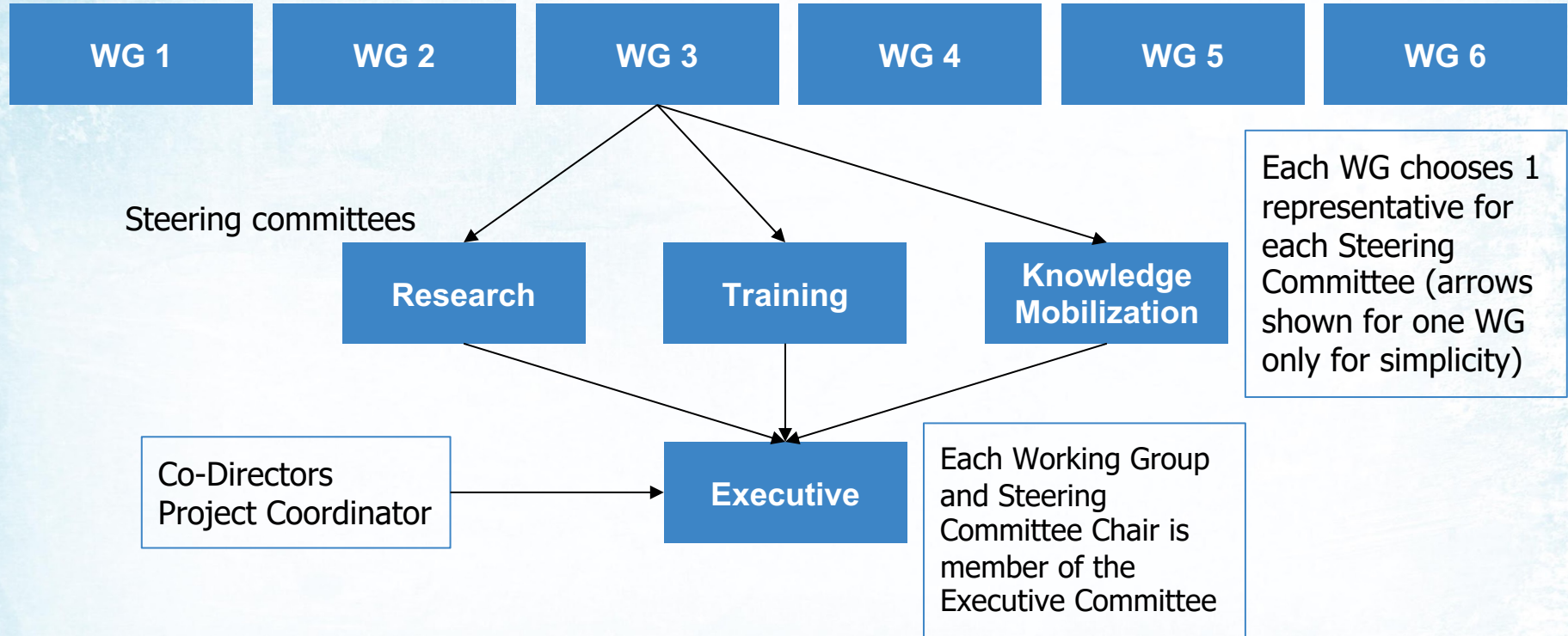


<https://interparestrustai.org/assets/public/20210608-IPTAI-OrganizationalPolicy.pdf>

TrustAI



Committee structure in practice



Working groups

WG1: Creation & Use (CU)

WG2: Appraisal & Acquisition (AA)

WG3: Arrangement & Description (AD)

WG4: Retention & Preservation (RP)

WG5: Management & Administration (MA)

WG6: Reference & Access (RA)

Keywords for all WGs: Ethics, Transparency, Sustainability, Solidarity, Diversity, Inclusiveness, Equity, Responsibility, Caution, Privacy, Autonomy



Working groups

Creation and Use: Keywords

Making Records, Receiving Records, Form, Format, Function, Record Identity, Record Accuracy, Record Reliability, IP1 Benchmark Metadata for Authenticity, Records Classification, Access Privileges, FOIA, Privacy.

Appraisal and Acquisition: Keywords

Records Analysis, Holdings Analysis, Retention and Disposition Scheduling, Selection, Disposal, Transfer, Authentication, Accessioning, Accession Register, Accession Metadata.



Working groups

Arrangement and Description: Keywords

Archival Units, Documentary Relationships, Descriptive Standards, Language Analysis, Descriptive Instruments, Metadata.

Retention and Preservation: Keywords

In-house Repositories, Cloud Storage, Migration, Conversion, Records Identity and Integrity, IP1 Baseline Metadata, Authentication, Digitization, Digitized Records Metadata, Forensics of Preserved Material.



Working groups

Management and Administration: Keywords

Policy Analysis, Policy Design, Policy Development, Economic Models, Resources Assessment, Risk Assessment, Security.

Reference and Access: Keywords

Discoverability, Accessibility, Users, Uses, Online Services, Offline Access Services, Legal Issues, Security Issues, Privacy, Openness, Dissemination, Crowdsourcing.



Working groups

Creation & Use	Appraisal & Acquisition	Arrangement & Description	Retention & Preservation	Management & Administration	Reference & Access
Erik Borglund	Jenny Bunn	Jennifer Douglas	Babak Hamidzadeh	Jim Suderman	Jessica Bushey
Adama Pam Ahmed El-Roby Aída Luz Mendoza Navarro Carlos Granados-Ocon Elizabeth J. Lomas Emmanuelle Pyrz Fraser D. R. Taylor Georgia Barloura Göran Samuelsson Ilaria Pescini Isto Huvila James Lowry Jörgen Nilsson Lyle H. Ungar Maria Guercio Maria Mata Caravaca Nadia Caidi Prisca Giordani Sahika Eroglu Sanja Seljan Tero Päivärinta Tracey P. Lauriault Weimei Pan	Alicia Barnard Andrew D. Flinn Basma Makhoulouf Shabou Benjamin C.M. Fung Claudia M. Lacombe Forget Chaterera Gökhan Akçapınar Greg S. Bak Hüseyin Ünal Klavdija Nonex Leonardo Mineo Lluís-Esteve Casellas i Serra Mari Runardotter Mehluli Masuku Mpho Ngoepe Natasha Khramtsovsky Pekka Henttonen Rosely Rondinelli Silvia Trani Valentina Carola Victor Kabata Yakuo Shipka Yann Rodier	Alessandro Londei Ania Hernandez Quintana Constanza Salgado Cristiane Virginio Emilio Suarez Gonzales Eng Sengsavang Goran Zlodi Guanyan Fan Hande Uzun Külcü Joseph T. Tennis Katia Pérez Valdés Luis Miguel García Velázquez Mayra Mena Mugica Mohamed M. Ibnkahla Özgür Külcü Remei Perpinya Morera Richard Arias-Hernandez Stefano Allegrezza Stefano Benedetto Stefano Vitali Tomislav Ivanjko Vittorio Loreto Yaminel Bernal Astorga Zied Bouida	Amber Lannon Anna Sexton Anna Stahlbrost Arian Rajh Arien Gonzales Crespo Frank Dehne Fred Cohen Gabriele Bezzi Glenn A. Dingwall Gregor Jenus Hrvoje Stancic Kelly Stewart Mats Stengård Meltem Dişli Nicholas M. Weber Pat Moore Patricia C. Franks Peter L. Pulsifer Samir Musa Stephen Fai Tamara Adriani Salim	Anahi Casadesus de Mingo Barbara Endicott-Popovsky Bojan Cvelfar Dieter Schlenker Elizabeth J. Shepherd Hernán Cabrera Ivan Despot Ivan Dunder Kenneth F. Thibodeau Mia Steinberg Milena Dobрева Moises Rockembach Paige Hohmann Proscovia Svärd Samuel Tweneboah-Koduah Shadrack Katuu Shadreck Bayane Shahnaz Bohlouli Sherry Li Xie Tania Cerquitelli Tolga Çakmak	Adam Jansen Adele Torrance Assaf Tractinsky Benedetto Luigi Compagnoni Darra L. Hofman Demet Soylu Eime Javier Cisneros Brito Emanuele Frontoni Gabriela Andaur Georg Gaenser Georgia di Marcantonio (GRA) Grant Mitchell Ingemar Andersson Marco Lanzini Pierluigi Feliciati Pilar Díaz Rodrigo Cuellar Hidalgo Salvatore Alongi Silvia Schenkolewski Sindiso Bhebhe Tatjana Hajtnik Tshepho Mosweu Umi Asma Mokhtar Victoria L. Lemieux

Working groups resources

On the website, in the restricted area:

- grant application documents
- templates for study proposals, reports, etc.
- information about meetings
- emails for all researchers

Questions?

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Webinar 3

- July 16 @ 10AM PDT
- Research question, goals, methodologies
- Working groups break-out discussions
- Next steps, responsibilities, first in-person meeting, Milestones Report, financial reporting

Thank you!

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