

## **hessian.AI - Researcher Links Workshop**

**Title:** "AI Horizons: The hessian.AI Visualization and Collaboration Forum"

**Sub-title:** AI-centric interdisciplinary research & development projects for addressing 2030 UN Sustainable Development Goals

hessian.AI - Researcher Links Workshop is a call to join the researcher to connect researchers for collaboration for research and development role of AI- & Visualisation-abled for UN- Sustainable Development Goals. This workshop is delivered by hessian.AI in conjunction with the IV2024 Forum, which is part of its research forum to connect researchers globally. It will provide participants with the insights, understanding, and collaboration to address the role of AI within the context of UN Sustainable Development Goals.

### **Researcher Link Workshop Aims**

The workshop's objectives are to develop several interdisciplinary research and development projects that use AI-enabled technology to address UN sustainable goals that impact the quality of life globally, as defined by international bodies like the UN.

These projects' focus will be on using AI-centric smart tools to promote awareness, stimulate a creative and interdisciplinary approach, and encourage applications to Achieve UN\_SDGs through research into cross-fertilizations of topics selected for the workshop:

1. Increase awareness of the AI impact mentioned above and how technological development is addressed to achieve UN\_SDGs.
2. Appropriate AI is based on real-time/rich datasets, analysing the conjunction of textual and imaging data (of the micro and macro world), including sensory / Crowd-Sourced / IOT.
3. Create a five-year plan with AI-enabled UN-SDG.
4. Instigate longer-term sustainable processes via AI-enabling techniques, computational Intelligence, machine, and deep learning systems:
  - a. Involving practitioner and domain expert experiences to drive future multidisciplinary goals research.
  - b. Consequent derivation of educational principles, informing professional practice for newcomers
  - c. Widening participation, collaboration, and an open forum to engage a broader audience in achieving UN-SDG
  - d. Auditing outcomes in practice; generating a feedback loop for analysing the performances of current systems so that AI can accelerate the realisation of such goals.
5. Produce a set of carefully crafted research problem specifications that capture spectrum-related issues implied by these SDGs.
6. Disseminate good practice via exemplar case study reports.

## Participants/ Contributors

This workshop will be held in conjunction with the 5th AI and Visual Knowledge Discovery within IV2024, the 28th edition Information Visualisation forum. This forum expects participants from 30+ countries and 150+ Institutions who will attend the conference. The workshop will include SDG stakeholders to represent the current state and how AI enablers can provide solutions.

They will include:

- AI & VKD researchers with an interest in AI-enabled and intelligent systems
- Funding bodies internationally
- Decision-makers are responsible for public policies. These Key decision-makers will be invited for the plenary sessions and group discussion sessions so they will be better informed via exemplar case studies and increasing aggregated data deploying visual analytics and other intelligent tools to overlay, for example, indicators and epidemic strategies of:
  - o sustainable solutions
  - o AI-enabled Risks analysis
  - o Potential for benefit from increased awareness and coordinated actions to facilitate pro-active measures and elaboration of SDGs policies.
- The workshop also intends to engage the multidisciplinary bodies from government bodies where possible.
- Participants will be included from different countries, universities & institutions for a broader impact of hessian-AI work and its impact globally.

## Workshop Logistics/ Draft Agenda

Below is a draft agenda for the workshop, including descriptions and timings for the sessions that are planned:

# Days	# Sessions	# Days	# Sessions
<b>Day 1</b>	<p><b>S1</b> - Rationale, objectives/activities planned.</p> <ul style="list-style-type: none"> <li>- UN_SGDs overview</li> <li>- Problems statement &amp; expectations</li> </ul> <p><b>S2</b> - UN_SGDs News &amp; challenges</p> <ul style="list-style-type: none"> <li>- Current actors and monitoring processes and role of AI</li> </ul> <p><b>S3</b> - State of Art Report on AI-centric Innovative Systems for SDGs</p> <ul style="list-style-type: none"> <li>- Current technology applied &amp; how AI will impact.</li> </ul> <p><b>S4</b> - Round Table Focus Group</p> <p><b>S5</b> - Speed-dating event to break the ice between participants.</p> <ul style="list-style-type: none"> <li>- Form small groups (mixing different countries) for breakout sessions;</li> <li>-</li> </ul>	<b>Day 2</b>	<p><b>S1</b> - "KEY-TALK1"/ Panel session1</p> <p><b>S2</b> - "AI-enabler" Aspects &amp; challenges;</p> <p><b>S3</b> - "UN-SDGs – domain 1" Aspects &amp; challenges.</p> <p><b>S4</b> - "UN-SDGs – domain 2" Medical aspects &amp; challenges;</p> <p><b>S5</b> - "Current Practices" shortcomings in current practices</p> <p><b>S6</b> - "EVENING DEBATE" Group reports. Flash talks and Poster research presentations of participants.</p>

<p><b>Day 3</b></p> <p><b>S1</b> - “KEY-TALK1”/ Panel session1          - Role of Analytics &amp; visualization &amp; Data capture in AI-enablers          - Case studies</p> <p><b>S2 - Pitch Session 1</b> - “Sustainable AI approach”          - Approaches &amp; methodologies          - Privacy, ethics, and impact</p> <p><b>S3 Pitch Session 2</b> - “AI-adaptation”          - Approaches &amp; potentials of this to “UN-SDGs – domain 1.”</p> <p><b>S4 Pitch Session 3</b> - “AI-adaptation”          Approaches &amp; potentials of this to “UN-SDGs – domain 2”</p> <p><b>S5 Pitch Session 4</b> - “AI-adaptation”          Approaches &amp; potentials of this to “UN-SDGs – domain 3”</p> <p><b>S6</b> - Flash talks and Poster research presentations of participants</p>	<p><b>Day 4</b></p> <p>“Future Plan &amp; Collaboration”</p> <p><b>S1</b> - “Challenges”          - Joint discussion based on possible selected domains.          - Research ideas are gathered.</p> <p><b>S2</b> - “Possibilities”          - Joint discussion on global collaboration          - Research ideas gathering (Brainstorming)</p> <p><b>S3</b> - “PROPOSALS”          - Group conceptualization of candidate research projects          - Final discussion on candidate research projects (Workshop Report)</p> <p><b>S4</b> - “Conclusion &amp; Future Collaboration Planning”          -Next steps, commitments, and follow-up and forming a committee for the next workshop</p>
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## Outcomes/Impact

### Short Term:

We expect a number of AI-enabled multidisciplinary project specifications that will include:

- Title, authors, Abstract, keywords, description, and detailing of Research questions (entailing aims and objectives). This will be coupled with a pathway plan for its impact design that includes Research uptake, Use, and Influence and forward and backward tracking of its impact. Also, the delegates' names should be listed in a detailed action plan.
- AI enablers (smart tools, big data, analytics, and the other technologies selected for the project) address the themes of projects that solve the problems posed by UN-SDGs.
- Authors are expected to collaborate closely after the workshop on each project they are involved in and produce this as a position paper for presentation in the form of a booklet titled Research & Development Project on AI-enablers of IN-SDGs.
- Networking & mentoring and exchange of ideas for future collaboration between different disciplines and researchers with practitioners.
- Engagement with Stakeholders to use technology to develop a purpose to address AI adaptation for data capture, standard Open Data format, analysis, and visualization, leading to decision-making for the provision of better sustainable environments.

### Long term:

- research capacity building that is helped with research & development project design <within session>
- potential research grant application jointly between international collaborators
- Multidisciplinary engagement that adheres to Knowledge Exchange between disciplines, stakeholders, researchers, and educators. Knowledge Exchange that couples AI camps closely to understand how subject domains benefit from this interaction.
- Scientists have access to rich practical case studies that can improve society's and the environment's well-being.
- Position & research paper publication.
- Design a broader impact reach study and assessment to encourage more comprehensive and international collaboration.
- pathway leading from the workshop outcomes to a broader impact on economic development or social welfare for low-income or vulnerable communities within 3-15 years.
- Joint development of AI framework for UN-SDGs

**Further possible outcomes:**

- Both groups—AI and domain-specific—have strong track records of experience leading and managing large-scale projects in the public and private sectors.
- The project's scope covers innovative technologies, education, and doctoral research training in an international collaborative forum/workshop.
- Both partners have complementary experience in network building and challenges that affect society.
- The other novel aspect of the workshop is the inclusion of AI-enablers (Computational Intelligence, IoT (Internet of Things), Big Data, visual analytics, and visual knowledge discovery as interdisciplinary applications for the betterment of humanities and civil societies.
- The workshop theme and breakout sessions will establish a longer-term forum to scope these challenges and integrate pathways to research collaboration, encouraging partners to engage in much deeper joint future work.