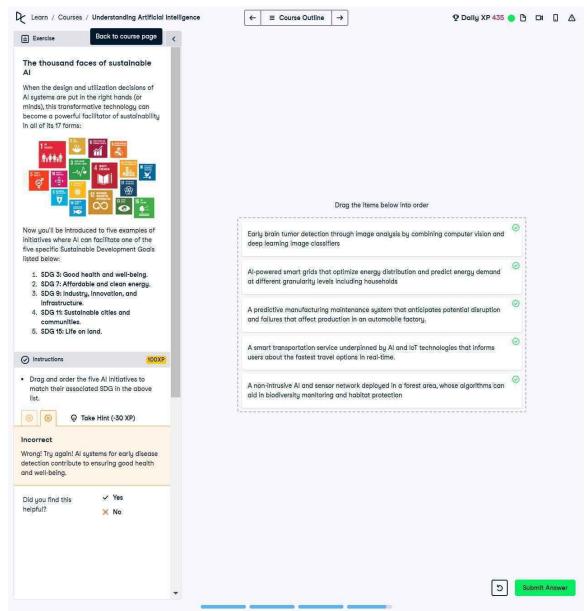# The Thousand Faces of Sustainable AI

Question:

When the design and utilization decisions of AI systems are put in the right hands (or minds), this transformative technology can become a powerful facilitator of sustainability in all its forms.

Now you'll be introduced to five examples of initiatives where AI can facilitate one of the five specific Sustainable Development Goals listed below:

- SDG 3: Good health and well-being.
- SDG 7: Affordable and clean energy.
- SDG 9: Industry, innovation, and infrastructure.
- SDG 11: Sustainable cities and communities.
- SDG 15: Life on land.

Drag and order the five AI initiatives to match their associated SDG in the above list.

Explanations for Each Card Position:

1. **Early brain tumor detection through image analysis by combining computer vision and deep learning image classifiers (SDG 3: Good health and well-being):**

   - This initiative aligns with SDG 3 because it directly supports healthcare advancements by detecting diseases early, thereby improving patient outcomes and enhancing overall health and well-being. AI in medical diagnostics can save lives by enabling timely interventions.

2. **AI-powered smart grids that optimize energy distribution and predict energy demand at different granularity levels including households (SDG 7: Affordable and clean energy):**

   - This initiative aligns with SDG 7 because it focuses on improving energy efficiency and promoting renewable energy sources. Smart grids reduce energy waste and help achieve universal access to clean and affordable energy, a cornerstone of SDG 7.

3. **A predictive manufacturing maintenance system that anticipates potential disruptions and failures that affect production in an automobile factory (SDG 9: Industry, innovation, and infrastructure):**

   - This initiative aligns with SDG 9 as it promotes innovation and sustainable industrialization by reducing downtime and waste in production processes. AI-powered predictive systems enhance efficiency and reliability, fostering resilient infrastructure.

4. **A smart transportation service underpinned by AI and IoT technologies that informs users about the fastest travel options in real-time (SDG 11: Sustainable cities and communities):**

   - This initiative aligns with SDG 11 because it improves urban mobility and reduces traffic congestion. AI-powered smart transportation supports sustainable urban development by optimizing resource use and enhancing the quality of life in cities.

5. **A non-intrusive AI and sensor network deployed in a forest area, whose algorithms can aid in biodiversity monitoring and habitat protection (SDG 15: Life on land):**

   - This initiative aligns with SDG 15 as it directly supports the conservation of terrestrial ecosystems. AI technologies monitor biodiversity and prevent habitat destruction, ensuring the sustainability of life on land.