

intel digital readiness

# AI Changemakers 2022

Leveraging the promise of AI for a sustainable tomorrow

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# Foreword



**Sandra L. Rivera**

Executive Vice President
General Manager, Datacenter &
AI Group,
Intel Corporation

I am happy to share the second edition of "AI Changemakers", a compilation of innovative AI impact projects by the next generation of technologists and future developers from around the world. These projects were carefully selected by Intel for their impact, aligned to the United Nation Sustainable Development Goals (SDGs).

With increased digitization of everything, Artificial Intelligence (AI) as a superpower is driving unprecedented transformation of industries and society. We are now in a unique position to address longstanding challenges facing our world and our communities. Be it climate change, social inequity, or pandemics sweeping across the globe, emerging technologies like AI o.er hope for real and actionable solutions. Aligned with 17 SDGs, governments, and organizations, like the United Nations, are investing in technology initiatives to drive positive change.

The next generation of technologists, future developers and innovators are tapping into the potential of Artificial Intelligence (AI), Data Science, and 5G to build new solutions for local and global challenges.

Intel's purpose is to create world changing technology that improves the life of every person on the planet. Intel put the silicon in Silicon Valley. As a leader committed to demystify and democratize emerging technologies, Intel launched AI Global Impact Festival for student developers and young AI innovators with the theme 'Enriching Lives with AI Innovations'. This festival brings together an incredible showcase of the carefully selected AI ideas and projects from around the world.

I am excited to present the compilation of outstanding projects from Festival 2022, titled "AI Changemakers", to further catalyse and leverage the promise of AI for a sustainable tomorrow. All the ideas and solutions shared here are aligned with the UN SDGs and have been developed as part of Intel® Digital Readiness Programs running in more than 25 countries across the globe. You can read more about it at www.intel.com/digitalreadiness. These programs demonstrate Intel's commitment towards the United Nation's universal call for shared corporate responsibility to 'end poverty, protect the planet, and ensure that by 2030 all people enjoy peace and prosperity.'[1]

Happy reading and I hope you are inspired to enrich lives with AI innovations.

[1] https://www.undp.org/sustainable-development-goals

# About AI Changemakers

Intel® Digital Readiness'[1] Programs aims to empower the next generation with the skill sets, mindset, toolsets, and opportunities to harness technology super powers like AI to create positive social impact and enrich the lives of everyone on the planet. These programs also motivate them to create solutions aligned with the Sustainable Development Goals (SDGs).

To celebrate enriching lives with AI innovation, Intel initiated an annual impact festival in 2021 – Intel® AI Global Impact'[2] Festival . It is an annual Digital Readiness celebration for next-generation technologists and teachers, as well as academia, ecosystem, and government partners to showcase AI innovation and impact. So far, there have been 2 editions of the festival – one each in 2021 and 2022.

In 2022, the festival was available on a virtual platform from September 1st through September 30th – with various engagement opportunities before and after the live event. With the participation of more than 80 countries, the festival showcased 79 innovative AI solutions by next-gen technologists and 30 innovative teaching-learning practices for AI skilling by educators from across the globe. In addition, the festival also provided an opportunity for government partners, academic institutions, and implementation partners, to share best practices adopted in AI skilling and implementation to promote digital readiness.

This book is a collection of 79 AI-based solutions received during the Impact Festival. These cutting-edge solutions created by students from across the globe highlight the power of AI in realising the UN SDGs. This collection of ideas and solutions has the potential to make a lasting impact on the world.

It has been divided into two sections:

- Top innovative AI-based social impact solutions by Global Award Winners, Intel® AI Global Impact Festival 2022
- Cutting-edge AI-based social impact solutions in alignment with UN SDGs

The book showcases the solutions created by students, highlighting the impact of Intel's digital readiness programs implemented in collaboration with the government, academic institutions, and implementation partners. Each of these intends to help meet one or more than one United Nations Sustainable Development Goal.

[1] http://www.intel.com/DigitalReadiness
[2] http://www.intel.com/impactfestival



# Leveraging the promise of AI for a sustainable tomorrow

# Top AI solutions by Global Award Winners, Intel® AI Global Impact Festival 2022

This section is a showcase of AI-driven solutions that emerged as winners from among the entries received from 24 countries.

## BhashaX Code Summarizer

BhashaX code summarizer uses AI to improve accessibility programming by utilizing the Intel® Distribution of the OpenVINO™ toolkit. This model helps developers, especially beginners, to understand code better in their own language.

**SDG 10 Reduced Inequalities**



**Krish Yadav**

Country/Region/Territory - **India**

Age Group:
**13 – 18 Years**

**Target audience of this solutions:**
People who are beginners in programming and are not from English-speaking backgrounds.

QR code to open YouTube video of project submitted by student

## Synthetic Data Generator

This solution generates artificially manufactured data using Intel® technologies that include Intel® Core™ i5, Intel® Optimization for TensorFlow*, PyTorch*, and Intel® Extension for Scikit-learn. This solution helps in mitigating the unavailability of data due to inefficient logistics, and sensitivity of data.

**SDG 9 Industry, Innovation and Infrastructure**



**Sayash Raaj**

Country/Region/Territory - **India**

Age Group:
**Above 18**

**Target audience of this solutions:**
Countries, individuals with scarcity of good quality data, health sector

QR code to open YouTube video of project submitted by student

## A Vision System Powered by AI for the Visually Impaired

This solution helps in teaching visually impaired children English through a scene-curved text recognition system based on 2 algorithms. Intel® Distribution of OpenVINO™ toolkit improves the performance by 3-4 times.

### SDG 3 Good Health and Well-being



**Jasmine Liu**

Country/Region/Territory - **People's Republic of China**

Age Group:
**13 – 18 Years**

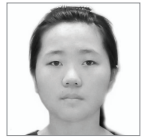
**Target audience of this solutions:**
People with visual impairments

QR code to open YouTube video of project submitted by student

## "Nighthawk" -- Enhasnced Full-color Imaging in Low Illumination

This solution is designed to achieve full passive image acquisition without the aid of auxiliary light sources in an extremely low-light environment and restore the imaging effect to normal light. It is powered by an Intel® Xeon® server using Pytorch and the Intel® Distribution of OpenVINO™ Toolkit.

### SDG 9 Industry, Innovation and Infrastructure



**Libenhua Cai**



**Weiyu Chen**



**Yufei Zhao**

Country/Region/Territory - **People's Republic of China**

Age Group:
**Above 18**

**Target audience of this solutions:**
Miners, Traffic Control Department, Heritage conservator, wildlife protector

QR code to open YouTube video of project submitted by student

## CS-M Tool

CS-M Tool, which leverages Intel® Distribution for Python, Intel® Math Kernel Library, Intel® DevCloud , Intel® Core™ I9 and Intel® Xeon®, helps people to have regular heart check-ups. It provides insights about cardiovascular diseases and shows data from 3 most recent check-ups to help users take stock of any development of the disease.

### SDG 3 Good Health and Well-being



**Tanapat Charunworaphan**



**Noppawit Chunram**



**Matt Tanthai Cosh**

Country/Region/Territory - **Thailand**

Age Group:
**13 – 18 Years**

**Target audience of this solutions:**
CVD patients, at risk people, remote area residents and cardiologists

QR code to open YouTube video of project submitted by student

## Indoor Industrial Safety Program

This drone solution focuses on the problem of indoor industrial safety. With drone scanning, and lidars high-resolution point cloud mapping, thermal imaging, and slam navigation, it aims to implement AI and digital mapping for autonomous environment feedback to secure a safer workplace within the indoor industrial environment.

### SDG 9 Industry, Innovation and Infrastructure



**Serr Brown**



**Dina Marie Stager**



**Ryan Galbraith**

Country/Region/Territory - **United States of America**

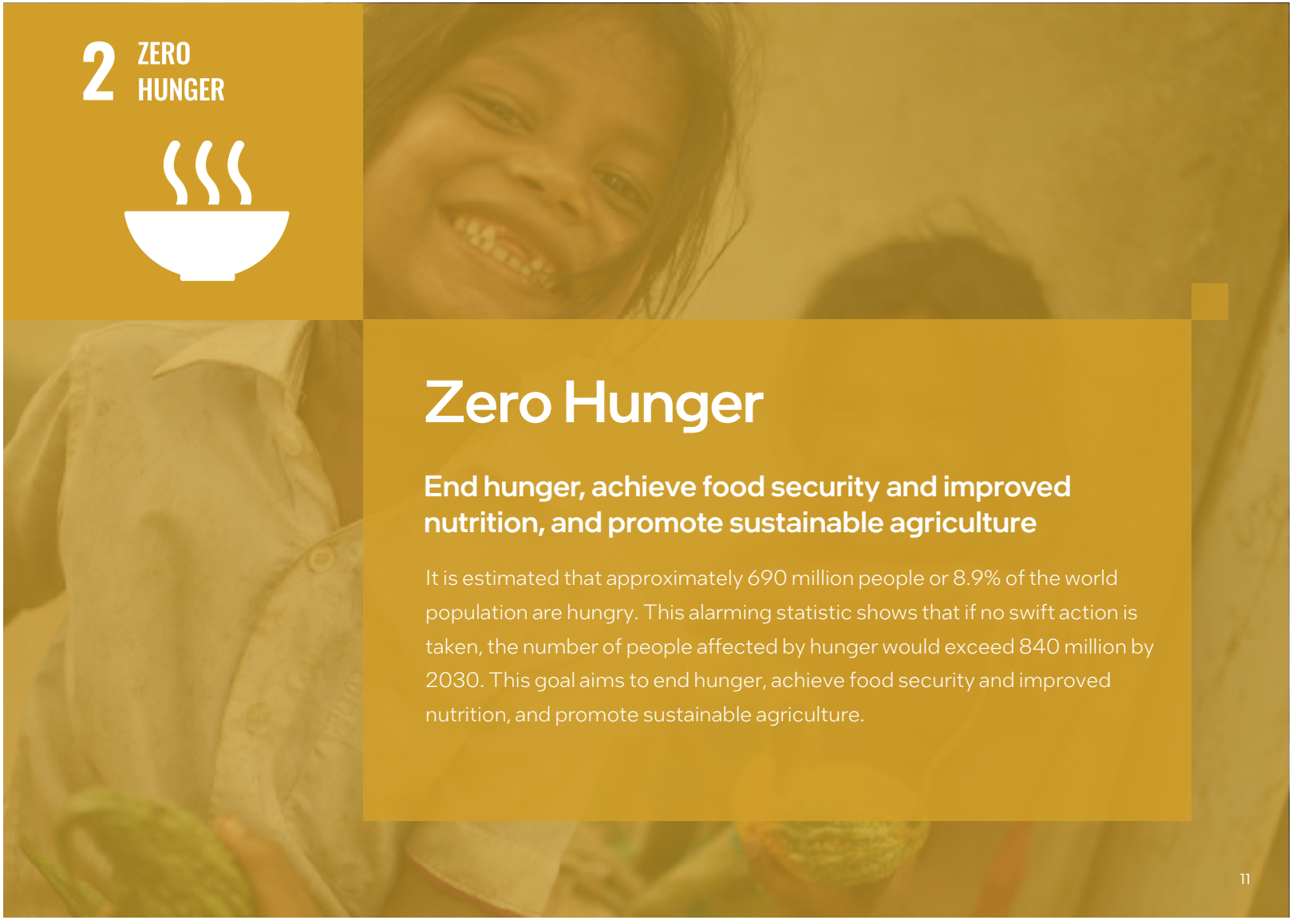
Age Group:
**Above 18**

**Target audience of this solutions:**
Indoor industrial safety

QR code to open YouTube video of project submitted by student

## Cutting-edge AI-based social impact solutions in alignment with UN SDGs

This section brings cutting-edge solutions built by next-gen technologists and innovators from 24 countries categorised according to the SDGs they address.



2 ZERO HUNGER

# Zero Hunger

## End hunger, achieve food security and improved nutrition, and promote sustainable agriculture

It is estimated that approximately 690 million people or 8.9% of the world population are hungry. This alarming statistic shows that if no swift action is taken, the number of people affected by hunger would exceed 840 million by 2030. This goal aims to end hunger, achieve food security and improved nutrition, and promote sustainable agriculture.

## Smart Stock Manager

Country Winner Award
AI IMPACT CREATORS

### SDG 2 Zero Hunger

The Intel-powered AI solution aims to reduce food wastage generated from unsold food items by predicting food demands. It can help store managers adjust the stock available to reduce accumulating food items that don't get sold.

**Created by Khoirunnisa Ajeng Lathifa, Asna Aufia, Muhammad Ahnaf Suryananda Kuncoro**

**Country/Region/Territory - Indonesia**

**Age Group: 13 – 18 Years**

**Target audience:**
Store owners

QR code to open YouTube video of project submitted by student

## Food Halls of the Future

### SDG 2 Zero Hunger

This solution enables the year-round production of a given plant and the development of unused areas by simulating atmospheric and soil conditions needed, using renewable energy. This helps in increasing the amount of food produced to reduce world hunger.

**Created by Bartlomiej Sym, Jakub Fryder, Dawid Biernacki**

**Country/Region/Territory - Poland**

**Age Group: 13 – 18 Years**

**Target audience:**
All the people of the world, especially the starving people

QR code to open YouTube video of project submitted by student

## Smart Plant - Intelligent Agriculture

### SDG 2 Zero Hunger

This solution helps farmers to choose crops based on the environmental parameters they provide. It can be developed towards expanding the cultivated plant database and can help increase agricultural incomes and investments in ecological methods of growing crops.

**Created by Milena Krzymowska, Kamila Tobota, Maja Szot**

**Country/Region/Territory - Poland**

**Age Group: 13-18 Years**

**Target audience:**
Farmers, producers of crop plants

QR code to open YouTube video of project submitted by student



3 GOOD HEALTH AND WELL BEING

# Good Health and Well-being

## Ensure healthy lives and promote well-being for all at all ages

In 2018, roughly 5.2 million children under 5 years died mostly from preventable and treatable causes. Health crises pose a global risk and have highlighted the importance of having a response strategy. The purpose of this goal is to ensure healthy lives and promote well-being for all at all ages.

## DiaDiet: Diabetes Mellitus Dietary Consultant

Country Winner Award

### SDG 3 Good Health and Well-being

This solution uses AI to scan ingredients in a dish to calculate calorie intake for a diabetes mellitus patient. Using Intel® Distribution of OpenVINO™ toolkit, the solution provides accurate, quick, and effective detection to ensure right nutritional intake.

**Created by Aretha Putri, Cahya Mustofa, Rico Pratoma**

**Country/Region/Territory - Indonesia**

**Age Group: Above 18**

**Target audience:**
All the citizens who are diabetics (mainly type 2 diabetes)

QR code to open YouTube video of project submitted by student

## Personal Ergonomics Assistant

Country Winner Award

### SDG 3 Good Health and Well-being

This solution can help correct the posture of working professionals by detecting discrepancies between ergonomic sitting posture and the user's posture. The software's efficiency is improved with the Intel® Distribution of OpenVINO™ toolkit and Intel® Extension for Scikit-learn. It helps create an efficient working environment.

**Created by Eryk Piasecki, Jakub Laczkowski, Kinga Stefaniak**

**Country/Region/Territory - Poland**

**Age Group: 13-18 Years**

**Target audience:**
Office workers, gamers, freelancers, students

QR code to open YouTube video of project submitted by student

## AI Physio

Country Winner Award

### SDG 3 Good Health and Well-being

AI Physio helps senior citizens maintain their muscle strength and stay active. It is a low-cost solution that supports and improves elders' quality of life.

**Created by Chua Rayner, Goh Caroline, Lim Joon Wei**

**Country/Region/Territory - Singapore**

**Age Group: Above 18**

**Target audience:**
Seniors, elderly and physiotherapists

QR code to open YouTube video of project submitted by student

## PosteoPilot - The AI Solution for Telehealth and Remote Checkups

Country Winner Award

### SDG 3 Good Health and Well-being

The solution is a portable and affordable gait analysis system that performs Human Pose Tracking using one-person tracking and localization systems with OpenPose. This solution, built on Intel® Distribution of OpenVINO™ Model Zoo, can be scaled for tele-rehabilitation and remote health check-ups.

**Created by Ceres Ooi, Ethan Jin, Myat Thu Khant**

**Country/Region/Territory - Singapore**

**Age Group: 13-18 Years**

**Target audience:**
Doctors, patients and caregivers in developed and developing world

QR code to open YouTube video of project submitted by student

## AI Safety Bus

Country Winner Award

### SDG 3 Good Health and Well-being

This AI-based solution helps in identifying a child who has been left alone in a car and sends alerts to their guardian. This solution leverages Intel® Core™ i7, Intel® NUC and OpenCV, and has the potential to save the lives of thousands of children worldwide.

**Created by Sungsik Hun, Wonnam Noh, Minhyeong Kim**

**Country/Region/Territory - South Korea**

**Age Group: 13-18 Years**

**Target audience:**
Children & kindergarten

QR code to open YouTube video of project submitted by student

## Personalized Food Warning System

Country Winner Award

### SDG 3 Good Health and Well-being

The AI-based personal food warning uses Intel® Distribution of OpenVINO™ and Intel® RealSense™ to help people know about the food they are consuming. People can identify their food's nutritional information and minimize accidents caused by unnecessary food consumption. This will play a major role in minimizing food waste and preventing environmental pollution.

**Created by Dongwoo Shin, Jieun Huh, Youngdek Yuek**

**Country/Region/Territory - South Korea**

**Age Group: Above 18**

**Target audience:**
People with food allergies or health problems

QR code to open YouTube video of project submitted by student

## AskTheCP - Antibiotic_Stewardship Made Simple

Country Recognition

### SDG 3 Good Health and Well-being

This solution guides doctors while prescribing an antibiotic to improve the effectiveness and safety of antibiotics and extend the life of the antibiotics as well by fighting antimicrobial resistance AMR. This helps in delivering personalized treatments for patients.

**Created by Natalia Konova, Teodor Stamenov**

**Country/Region/Territory - Bulgaria**

**Age Group: Above 18**

**Target audience:**
Hospitals, healthcare professionals, govt. institutions responsible for health & AMR control

QR code to open YouTube video of project submitted by student

## Moosh

Country Recognition

### SDG 3 Good Health and Well-being

This AI-powered solution uses a KNN recommendation algorithm to help people find the perfect gift for anyone.

**Created by Daria Leshem, Ido Kaplan, Raz Peleg**

**Country/Region/Territory - Israel**

**Age Group: Above 18**

**Target audience:**
86% of the population that feels stressed about finding the right gift

QR code to open YouTube video of project submitted by student

## OutOfBound

Country Recognition

### SDG 3 Good Health and Well-being

This smartphone app lets travellers share their experiences, including information on a trip like restaurants and places visited, costs, reviews, schedules, discounts, and more.

**Created by Gabriele Crimella, Alessandro De Blasio, Stefano Zambroni**

**Country/Region/Territory - Italy**

**Age Group: Above 18**

**Target audience:**
People looking to learn new ways to travel and keep in touch

QR code to open YouTube video of project submitted by student

## Bike4Map

Country Recognition

### SDG 3 Good Health and Well-being

This solution for cycling enthusiasts helps them find the bike routes that best suit their preferences. The program includes 500 verified and recorded routes with 1.3 million satellite photos, used to create and train AI models.

**Created by Jakub Brzozowski, Maciej Lewandowski**

**Country/Region/Territory - Poland**

**Age Group: Above 18**

**Target audience:**
Bike4Map: Cycling routes recommendation platform

QR code to open YouTube video of project submitted by student

## Jeen - personal assistant

Country Recognition

### SDG 3 Good Health and Well-being

Jeen, the app and the robot, acts as a personal assistant that informs people about their schedule, supports them with recommendations and can relate to other robots in their working space. The robot is based on Intel® Galileo Gen2 and Intel® Xeon® processors.

**Created by Cosmina Ene, Jasmine Guta, Sanziana Grecu**

**Country/Region/Territory - Romania**

**Age Group: 13-18 Years**

**Target audience:**
Students, office workers, people who suffer from burnout

QR code to open YouTube video of project submitted by student

## Dermoverse

Country Recognition

### SDG 3 Good Health and Well-being

Dermoverse is an AI-based Melanoma detector that helps people take care of skin cancer and all related conditions. The tool is built in a python-coded neural network and trained with a DOMM 93% accuracy model.

**Created by Hector Bordas Torrecillas, Victor Pottier Ibanez, Judith Cardona Vilar**

**Country/Region/Territory - Spain**

**Age Group: 13-18 Years**

**Target audience:**
Dermatologists, pharmaceuticals and AI researchers

QR code to open YouTube video of project submitted by student

## Communication system for Locked-in syndrome (LiS) Patients

SDG 3 Good Health and Well-being

This solution focuses on delivering an effective communication system for Locked-In Syndrome patients and helping them with basic communication by blinking their eyes. Intel® processors and Intel® Distribution of OpenVINO™ toolkit are used to drive this solution.

**Created by Rishi R, A Adarsh**
**Country/Region/Territory - India**
**Age Group: Above 18**

**Target audience:**
Locked-in syndrome patients

QR code to open YouTube video of project submitted by student

## Deep Learning Visualization with Grad-CAM In Case Brain Tumor Disease

SDG 3 Good Health and Well-being

This solution, powered by Intel® Core™ i7, visualizes the features from a layer in neural network and provides insights on the brain tumor location using Grad-Cam.minimizing food waste and preventing environmental pollution.

**Created by Deny Sulistiyo, Kemal Taufik Fikri, Ismatullah**
**Country/Region/Territory - Indonesia**
**Age Group: Above 18**

**Target audience:**
Medical field

QR code to open YouTube video of project submitted by student

## Skin Cancer Detection

SDG 3 Good Health and Well-being

This Intel-powered convolutional model helps identify and categorize tumors into benign or malignant.

**Created by Yahel Tubol, Ron Tartakovsky, Lior Komorovski**
**Country/Region/Territory - Israel**
**Age Group: 13-18 Years**

**Target audience:**
People that have skin tumors

QR code to open YouTube video of project submitted by student

## A real-time ergonomic assessment for children sitting post

SDG 3 Good Health and Well-being

This solution uses an Intel mini-PC and camera to capture real-time video of a student's sitting posture. It alerts the student when a high-risk level in posture is detected to reduce the risk of musculoskeletal injuries.

**Created by Boyu Zou**
**Country/Region/Territory - People's Republic of China**
**Age Group: 13-18 Years**

**Target audience:**
Children, Students, Teenagers

QR code to open YouTube video of project submitted by student

## Enjoy music - helping the hearing impaired understand music

### SDG 3 Good Health and Well-being

It can help deaf people hear the music through the vibration of the chair and bone conduction in the human body. The algorithm in the chair finds the audible range of each person and the audible frequency relationship.

**Created by Sihan Wu**
**Country/Region/Territory - People's Republic of China**
**Age Group: 13-18 Years**

**Target audience:**
Private companies, students, fresh graduate, higher education institutes

QR code to open YouTube video of project submitted by student

## Intelligent Nucleic Acid Sampling Robot

### SDG 3 Good Health and Well-being

With the help of Intel® AI technology, this nucleic acid sampling robot can provide a sampling service for targets of different heights, body pose, and positions. The deep learning algorithm accelerated by Intel® Distribution of OpenVINO™ Toolkit is deployed to make the sampling process more secure and efficient.

**Created by Dawei Zhang, Yao Lin, Man Yuan**
**Country/Region/Territory - People's Republic of China**
**Age Group: Above 18**

**Target audience:**
Medical staff & people who need nucleic acid sampling

QR code to open YouTube video of project submitted by student

## AI Chess

### SDG 3 Good Health and Well-being

AI chess is an artificial intelligence-based project that interacts with elders through a chess game. This improves the patient's memory power and helps keep them occupied.

**Created by Zi Hao Toh, Jiaheng Eu, Gao Xirou**
**Country/Region/Territory - Singapore**
**Age Group: Above 18**

**Target audience:**
Seniors & elderly

QR code to open YouTube video of project submitted by student

## Photong (Visual impairment to sense the visual world with music)

### SDG 3 Good Health and Well-being

This solution aims to enable those with visual impairment to sense the visual world with music using deep learning models. Photong will be introduced to organisations, government agencies, nursing homes and special needs schools in the future with Intel's hardware and software infrastructure.

**Created by Yanjia Zhang**
**Country/Region/Territory - Singapore**
**Age Group: 13-18 Years**

**Target audience:**
Seniors and elderly

QR code to open YouTube video of project submitted by student

## AI system to prevent computer game overindulgence

### SDG 3 Good Health and Well-being

The solution is designed to help prevent video games from negatively impacting people's lives by monitoring and analysing the player's emotional state and alerting the players when a break is needed. This solution is built using Intel® Distribution of OpenVINO™ pre-trained models and Intel® Core™.

**Created by Kim Minsoo, Yoon Doheon, Heo Jungmin**

**Country/Region/Territory - South Korea**

**Age Group: 13-18 Years**

**Target audience:**
People who have difficulties due to overindulgence of games

QR code to open YouTube video of project submitted by student

## ECG analysis system to predict heart disease

### SDG 3 Good Health and Well-being

This solution aims to help people monitor their heart condition by analysing ECG images with the help of AI and providing insights on any potential problems detected. This Intel-powered solution can help reduce the incidence and seriousness of heart disease.

**Created by Yun Seoljun, Kim Minjun, Lee Haerang**

**Country/Region/Territory - South Korea**

**Age Group: 13-18 Years**

**Target audience:**
Someone who has heart disease or danger of having chances of heart disease

QR code to open YouTube video of project submitted by student

## Classifying Audio of Babies Crying

### SDG 3 Good Health and Well-being

This solution, powered by Intel® Core™ i5 is designed to help parents of children under 8 months to understand their baby's feelings and needs through analysis of patterns like the crying of the baby or other sounds that they make.

**Created by Carl Tidtijumreonporn, Chayapol Sakarinkhul, Anawin Supinna**

**Country/Region/Territory - Thailand**

**Age Group: 13-18 Years**

**Target audience:**
Parents with children from birth to 8 months

QR code to open YouTube video of project submitted by student

## Osteoarthritis Rehabilitation Assistant for the Elderly with deep learning technology

### SDG 3 Good Health and Well-being

O-RA is a platform that makes physical therapy accessible anywhere, anytime via mobile phones. This solution, powered by Intel® Core™, can help resolve the shortage of physical therapists and improper physical therapy.

**Created by Napaschol Inthpan, Kaewkla Sroykabkaew, Krittapat Tragoolpua**

**Country/Region/Territory - Thailand**

**Age Group: 13-18 Years**

**Target audience:**
Elderly (Above 40 years old)

QR code to open YouTube video of project submitted by student



4 QUALITY EDUCATION

# Quality Education

## Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

It was projected that more than 200 million children would be out of school, and only 60% of young people would be completing upper secondary education in 2030. This was before the COVID-19 pandemic hit. Education has the power to enable upward socioeconomic mobility and escape poverty. Ensuring inclusive and equitable quality education and promoting lifelong learning opportunities for all is what this goal is all about.

## Noted!- Scanner, Transcriber, and AI Sorting Technology

Country Winner Award
AI IMPACT CREATORS

### SDG 4 Quality Education

This solution helps make educators' and students' lives easier by taking existing notes, scanning, transcribing, and sorting their notes into one clear document. The solution leverages Intel CPUs for image recognition.

**Created by Suhina Chand, Keyon Jazayeri, Mahita Adluri**
**Country/Region/Territory - United States of America**
**Age Group: 13-18 Years**

**Target audience:**
Students & educators of all kinds

QR code to open YouTube video of project submitted by student

## Confused Student Electroencephalography Prediction using Deep Learning

### SDG 4 Quality Education

With the combination of EEG and AI technology, this solution detects confusion in special needs students' responses to different teaching media. This program uses computer vision in conjunction with deep learning to detect the confused state of students in the classrooms and help them to improve.

**Created by Kenneth Zi Yang Foo, Ting Li, Timothy Ng, Gao Jie Irene Wong**
**Country/Region/Territory - Singapore**
**Age Group: Above 18**

**Target audience:**
Students of tertiary education

QR code to open YouTube video of project submitted by student

## Virtual Quiz Game for Excellence.

### SDG 4 Quality Education

This AI-based virtual quiz makes learning fun and helps students prepare for their exams. The solution incorporates an Intel® RealSense™ camera for face recognition and green screening of the students and uses Intel software to improve performance.

**Created by Vuyolwethu Nkomo, Angila Mokoena, Nomvula Mabuza**
**Country/Region/Territory - South Africa**
**Age Group: 13-18 Years**

**Target audience:**
Education industry

QR code to open YouTube video of project submitted by student

## Pertra

### SDG 4 Quality Education

This solution creates a psychological profile of a student through tests done by professionals to analyze their emotional state. By checking the analysis, it can help the student in their studies, teach them to manage their emotions and guide them in their school journey.

**Created by Adria Bagueste, Guillem Martinez**
**Country/Region/Territory - Spain**
**Age Group: 13-18 Years**

**Target audience:**
Students of all kind, schools & education sectors

QR code to open YouTube video of project submitted by student

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



# Industry, Innovation and Infrastructure

## Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

Through industrialization, innovation and infrastructure, the world can open a new horizon of economic opportunities that generate employment and income. However, this can only be achieved when the world is inclusive in its progress because 16% of the global population does not have access to mobile broadband networks. Least developed countries, in particular, need to accelerate the development of their manufacturing sector if they are to scale up investment in scientific research and innovation. This goal's objective is to build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.

## Binary Classifiers for Multiclass Classification

Country Recognition

SDG 9 Industry, Innovation and Infrastructure

This solution reduces the computation power required in multiclass classification by employing less complex binary classifiers without sacrificing accuracy.

**Created by Mohit Sharma**
**Country/Region/Territory - Canada**
**Age Group: Above 18**

**Target audience:**
Data scientists, Machine Learning engineers

QR code to open YouTube video of project submitted by student

## RoboE Equipment With a Purpose

Country Recognition

SDG 9 Industry, Innovation and Infrastructure

RoboE semi-automates thread cutting in SMEs in the metal manufacturing industry. This solution will help improve efficiency making the SME more competitive and able to tackle more orders.

**Created by Andreas Stensig, Mette Dam Nielsen, Bjorn Hansen**
**Country/Region/Territory - Denmark**
**Age Group: Above 18**

**Target audience:**
Small & medium sized enterprises in the metal manufacturing industry

QR code to open YouTube video of project submitted by student

## Binter

Country Recognition

SDG 9 Industry, Innovation and Infrastructure

This advanced identification, verification, sorting and rewarding system tracks the journey of the packages and makes the recycling process easier. This can increase recycling rates and achieve a circular economy in which the value of resources, materials and products is maintained.

**Created by Vasiliki Zacharia, Stella Kontogoulidou, Maria Kyratzi**
**Country/Region/Territory - Greece**
**Age Group: Above 18**

**Target audience:**
Citizens and food and beverage corporations that use packages for products.

QR code to open YouTube video of project submitted by student

## ECOSMART A New Recycling

Country Recognition

SDG 9 Industry, Innovation and Infrastructure

This is an AI-based garbage container capable of making recycling simpler, clean, and efficient. It features four AI services: Facial Recognition, Gesture Recognition, Object Recognition, and Object Measuremen

**Created by Julio Oliveira, Ivo Gomes, Daniel Santos**
**Country/Region/Territory - Portugal**
**Age Group: Above 18**

**Target audience:**
All people

QR code to open YouTube video of project submitted by student

## PolenData

Country Recognition

### SDG 9 Industry, Innovation and Infrastructure

PolenData, a modular and intelligent house filled with sensors for pollinators, helps retrieve important information to increase the levels of pollination in a farm, increasing the farm's productivity. With this solution, farmers can make sustainable efforts in farming.

**Created by Miguel Roque Martins, Pedro Pacheco, Daniel Pereira**
**Country/Region/Territory - Portugal**
**Age Group: 13-18 Years**

**Target audience:**
Farmers who want to increase their productivity

QR code to open YouTube video of project submitted by student

## Glosstar - Match Your Job

Country Recognition

### SDG 9 Industry, Innovation and Infrastructure

This innovative web platform matches applicants and employers using AI.

**Created by George Botnari, Dan Emil Baciu, Florin Aurel Cordos**
**Country/Region/Territory - Romania**
**Age Group: Above 18**

**Target audience:**
Private companies, students, fresh graduate, higher education institutes

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## Avangarde Vehicle System

Country Recognition

### SDG 9 Industry, Innovation and Infrastructure

This solution is a telecommunication system that can be integrated into commercial and passenger vehicles. It helps to communicate with post-accident emergency services.

**Created by Efe Nevzat ARSLAN, Ozan SENGUL, Nehir Sara AK**
**Country/Region/Territory - Turkey**
**Age Group: 13-18 Years**

**Target audience:**
Automotive industry

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## Industrie 4.0 System With AI

### SDG 9 Industry, Innovation and Infrastructure

This project aims to automate the quality control of the existing Industry 4.0 plant with the help of AI. This becomes possible by using a camera that improves fault detection compared to conventional sensors.

**Created by Jannik Reichert, Michaela Sedlmeier, Daniel Abraham**
**Country/Region/Territory - Germany**
**Age Group: Above 18**

**Target audience:**
A sustainable industry

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## Robotic Arm With Color Sorting

SDG 9 Industry, Innovation and Infrastructure

The goal of this project was to teach the UR robot arm to recognize the alphabet through colour coding. It will help sort out defective parts in a production line, conserve resources and contribute to sustainability.

**Created by Manuel Wittmann, Simon Hofmann, Patrick Adlfinger**
**Country/Region/Territory - Germany**
**Age Group: Above 18**

**Target audience:**
Production industries, students

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## Safety Gear Detection System

SDG 9 Industry, Innovation and Infrastructure

This solution generates artificially manufactured data using Intel® technologies that include Intel® Core™ i5, Intel® Optimization for TensorFlow*, PyTorch*, and Intel® Extension for Scikit-learn. This solution helps in mitigating the unavailability of data due to inefficient logistics, and sensitivity of data.

**Created by Nikhitha Avula, Vinay Ratnala, Tarun Gupta**
**Country/Region/Territory - India**
**Age Group: Above 18**

**Target audience:**
Industry and innovation sector

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## Adaptive Traffic Lights With Deep Q-Learning

SDG 9 Industry, Innovation and Infrastructure

The solution is built to increase the effectiveness of the traffic light system. The solution, powered by Intel® Core™ i5, uses adaptive traffic lights with deep Q-Learning to reduce traffic congestion.

**Created by Nurul Hanifah, Novelio Indarto, Makrufiah Sakatri**
**Country/Region/Territory - Indonesia**
**Age Group: Above 18**

**Target audience:**
Traffic lights in Indonesia

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## Driver Face Detection For Vehicle Security System

SDG 9 Industry, Innovation and Infrastructure

The Intel-powered AI solution based on computer vision identifies the faces of drivers with the help of a camera and can disable the car if it doesn't recognize a legitimate driver.

**Created by Rudi Hartono, Taufiqurrachman Syahbana, Savina Anindita Stefani**
**Country/Region/Territory - Indonesia**
**Age Group: 13-18 Years**

**Target audience:**
All drivers, vehicles business owner

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## Quantification and Visualization of Fish Activity Using Sonar Images

SDG 9 Industry, Innovation and Infrastructure

This solution, powered by Intel® Core™ i7 and optimized on Intel® Optimization for TensorFlow, aims to reduce the expenditure for aquaculture feeds by accurately determining the number of fish in a fishpond.

**Created by Kota Sakamoto**
**Country/Region/Territory - Japan**
**Age Group: Above 18**

**Target audience:**
Aquaculture researchers and aquaculturists

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## iGuard

SDG 9 Industry, Innovation and Infrastructure

This solution is designed to put workers and machines into the digital world using Intel® RealSense™ cameras and dynamically monitor the process of human-machine interaction. It runs neural network inference on Intel® Distribution of OpenVINO™ Toolkit runtime and provides early warning of risks, protecting factory workers.

**Created by Weihang Shen, Yutian Qiu, Zhe Jiang**
**Country/Region/Territory - People's Republic of China**
**Age Group: Above 18**

**Target audience:**
Factory workers

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## Your Fingerprints are Precious

SDG 9 Industry, Innovation and Infrastructure

This solution, optimized on Intel® NUCs, Intel® Distribution of OpenVINO™, is built to enhance biometric security by ensuring that identity theft is eliminated through simplified classified and labelling tools.

**Created by Hyunwoo Kim, Youngseok Kim**
**Country/Region/Territory - South Korea**
**Age Group: Above 18**

**Target audience:**
Any people who upload their own image on the internet

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## Asteroid Mining With Computer Vision (AMCV)

SDG 9 Industry, Innovation and Infrastructure

This AI-based solution will help develop a more thorough understanding of Space by studying carbonaceous asteroids containing water and fuel elements. The solution harnesses Intel® Movidius™ Vision Processing Units and the Intel® Distribution of OpenVINO™ Toolkit to predict the content in the asteroid's mineral vein.

**Created by Abhishek Rao**
**Country/Region/Territory - United States of America**
**Age Group: 13-18 Years**

**Target audience:**
Planetary science researchers & Aerospace engineers

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## Industrial Safety Through SLAM & CV

### SDG 9 Industry, Innovation and Infrastructure

This solution focuses on industrial safety, specifically indoor industrial safety using an autonomous remote-control car outfitted with Intel® Movidius™, Intel® RealSense™ camera, and Intel® RealSense™ lidar. The goal is to build a universal indoor safety navigation and detection system that can help understand emergency environments created by earthquakes, floods, fires, and natural disasters.

**Created by Neethi Anand Gangidi, Cordelia Omonkhegbe, Denzel Wislon**

**Country/Region/Territory - United States of America**

**Age Group: Above 18**

**Target audience:**
International/national audience, communities, students & professionals

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10 REDUCED INEQUALITIES



# Reduce Inequality Within and Among Countries

The world's wealth is distributed unevenly with a small group holding a large share. This inequality leads to financial and social discrimination. Today, at least 1 in 5 people have experienced some kind of discrimination on the grounds prohibited under international human rights law.1 To help countries flourish and promote equality and prosperity, this goal strives towards reducing inequality within and among countries.

[1]UN Stats, 'The Sustainable Development Goals Report 2022'

## ThirdEye: Blind's Best Friend

Country Winner Award

### SDG 10 Reduced Inequalities

ThirdEye can help the Blind by detecting obstacles and warning users through a voice assistant. This solution, built using Intel® Distribution of OpenVINO™ and Intel® Neural Compute Stick, also helps in tracking the user through GPS and sends relevant data to the caregiver.

**Created by Poon Chloe Rou Yi**

**Country/Region/Territory - Malaysia**

**Age Group: 13-18 Years**

**Target audience:**
Blind community

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## Programming learning environment with natural language and prebuilt database

Country Recognition

### SDG 10 Reduced Inequalities

The solution aims to provide a programming learning environment that students can use to start their logical programming journey easily and seamlessly. The solution is designed to be compatible with all Intel-based x86_64 platforms and comes with no OS limitations.

**Created by ChiehChen Lin**

**Country/Region/Territory - Taiwan**

**Age Group: Above 18**

**Target audience:**
Students with no programming knowledge

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## Motion to Music - M2M

### SDG 10 Reduced Inequalities

This solution uses an Intel® RealSense™ camera with AI OpenPose to transform movement into music. This results in helping disabled people to enjoy movement and participate in activities with other people.

**Created by Tobias Brueggemann**

**Country/Region/Territory - Germany**

**Age Group: Above 18**

**Target audience:**
People with and without disabilities for making music in an inclusive way

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11 SUSTAINABLE CITIES AND COMMUNITIES



# Sustainable Cities and Communities

## Make cities and human settlements inclusive, safe, resilient and sustainable

Even though cities and metropolitan areas are powerhouses of economic growth—contributing about 60% of global GDP, they also account for about 70% of global carbon emissions and over 60% of resource use. Rapid urbanization is increasing the number of slum dwellers, inadequate and overburdened infrastructure and services, worsening air pollution and unplanned urban sprawl. This goal targets making cities and human settlements inclusive, safe, resilient and sustainable.

## Walklets

Country Recognition

### SDG 11 Sustainable Cities and Communities

Walklets is a web application that can protect people's privacy in photos. The solution leverages Intel® Distribution of OpenVINO™ toolkit and Intel® Core™ and Xeon® processors to mask the faces in the photo by embedding emojis onto the faces or by obscuring the entire picture.

**Created by Yusuke Sakabe, Kosei Harada**
**Country/Region/Territory - Japan**
**Age Group: Above 18**

**Target audience:**
SNS users

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## Auto Trash Detection

Country Recognition

### SDG 11 Sustainable Cities and Communities

This solution helps automate the garbage sorting process. With the help of an object detection model trained using yolov5. It can create a system for identifying and sorting waste from images, video, or live cameras. After identifying the garbage, it can be collected after the coordinates are received from the model.

**Created by Eduard Balamatiuc, Daria Gheorghies**
**Country/Region/Territory - Moldova**
**Age Group: Above 18**

**Target audience:**
Every country in the world

QR code to open YouTube video of project submitted by student

## City Surveillance System

Country Recognition

### SDG 11 Sustainable Cities and Communities

City Surveillance System helps prevent crime by detecting any suspicious activity through cameras and alerts the police to act. The camera is equipped with Intel® RealSense™ Depth Camera D435 for object, body, and face recognition.

**Created by Makoma Motloutsi, Unathi Morake, Nomazulu Shwabane**
**Country/Region/Territory - South Africa**
**Age Group: 13-18 Years**

**Target audience:**
Security companies and Police stations

QR code to open YouTube video of project submitted by student

## Prevention of Electric Scooter Accidents

### SDG 11 Sustainable Cities and Communities

The solution will prevent accidents on e-scooters even before the ride begins. To calculate the best safety score, the system calculates the current risk factor for a specific rider using AI and machine learning algorithms. The system can also intervene once it detects unsafe behavior in real-time.

**Created by Ido Cohen, Matan Arad, Mika Rotbart**
**Country/Region/Territory - Israel**
**Age Group: Above 18**

**Target audience:**
Electric scooter rental companies

QR code to open YouTube video of project submitted by student

## Smart Shopping Cart

### SDG 11 Sustainable Cities and Communities

With an accuracy of 72%, this solution studies customers' shopping habits from the supermarket and provides suggestions to help them with their purchases. It can even add items to their cart.

**Created by Safa Sharabaty, Mohammad Musa, Ibrahim N, atsheh**
**Country/Region/Territory - Israel**
**Age Group: 13-18 Years**

**Target audience:**
Supermarket customers

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## Grocery Buddy

### SDG 11 Sustainable Cities and Communities

Grocery Buddy is a grocery shopping companion that simplifies the shopping experience with built-in AI functionality and automated navigation. This solution, built with Intel® Distribution of OpenVINO™, Intel® NSC2, and powered by Intel® Core™, helps in reducing the queue time while shopping.

**Created by Ibrahim Syawwal Bin Sofian, Jiithendhran Sashidhran, Saaktii Vel Selvam**
**Country/Region/Territory - Malaysia**
**Age Group: 13-18 Years**

**Target audience:**
Supermarkets and hypermarkets

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## Recycle rAIght

### SDG 11 Sustainable Cities and Communities

This solution is used to sort recycling materials using AI and utilizes existing recycling bins in schools by integrating a camera system powered by Intel® Core™ and Intel® RealSense™ to detect and process the sorting.

**Created by Crystal Tan Li En, Arsa Muhammad Naufal**
**Country/Region/Territory - Singapore**
**Age Group: 13-18 Years**

**Target audience:**
Students, secondary schools and National Environmental Agency (NEA) Singapore

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## Bus Congestion Service to Inconvenience of Bus, to Prevent COVID-19

### SDG 11 Sustainable Cities and Communities

The solution, powered by Intel® Core™ and Intel® NCS2, ensures safer traveling for commuters by identifying the congestion status in public transportation. The congestion prediction service allows bus companies to adjust the interval and enables commuters to travel conveniently and comfortably.

**Created by Snag Hyup Park, Yang Won Yoo, Chang Yong Jeon**
**Country/Region/Territory - South Korea**
**Age Group: Above 18**

**Target audience:**
People who use buses and people who have difficulty accessing public transport

QR code to open YouTube video of project submitted by student

## Smart Traffic Lights in Cities

### SDG 11 Sustainable Cities and Communities

By analyzing computer vision images obtained in real-time, this solution will be able to regulate traffic and increase pedestrian safety efficiently. It can help create a connected network where all the captured data will feed artificial intelligence models that will improve day by day.

**Created by Daniel Carrasco Pardo, Jose Javier Carrasco de Pedro**
**Country/Region/Territory - Spain**
**Age Group: Above 18**

**Target audience:**
Town halls

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## Florella- Plant Health Manager

### SDG 11 Sustainable Cities and Communities

This solution utilizes computer vision to identify plant type, monitor its health, pest infestation control, and set reminders of maintenance tasks. It harnesses the Intel® Distribution of OpenVINO™ Toolkit and correctly recognizes 25 plants. It is useful to home plant owners and farmers.

**Created by Pascale Michaud**
**Country/Region/Territory - United States of America**
**Age Group: 13-18 Years**

**Target audience:**
Factory workers

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13 CLIMATE ACTION




# Climate Action

## Take urgent action to combat climate change and its impacts

2019 was the second warmest year to date in which carbon dioxide levels and other greenhouse gases in the atmosphere rose to new records. Climate change is having adverse effects on every country on every continent. It is unsettling national economies and disturbing lives. Weather patterns are fluctuating, sea levels are growing, and weather events are becoming more extreme. This goal promotes taking urgent action to combat climate change and its impacts.

## Fire Detection and Monitoring System Using Federated Learning Approach

Country Winner Award

### SDG 13 Climate Action

This solution is designed as a system for an early warning system to prevent wildfires. The solution uses Intel® NUCs, Intel® Distribution of OpenVINO™ toolkit, and drones to monitor forest areas and minimizes health hazards to firefighters.

**Created by Ho Wei Liang**
**Country/Region/Territory - Malaysia**
**Age Group: Above 18**

**Target audience:**
Local government, firefighting department, and residences or farmers in forest area

QR code to open YouTube video of project submitted by student

## AGROOTS: Agriculture Made Easy

Country Recognition

### SDG 13 Climate Action

By leveraging Intel® SSDs and CPUs, AGROOTS gives easy access to data like weather forecasts, hazards predictions and harvest recommendations to prevent agricultural losses.

**Created by Ciprian Meriacre, Daniela Balutel**
**Country/Region/Territory - Moldova**
**Age Group: 13-18 Years**

**Target audience:**
Agriculturists, agriculturalists, agrologists, agronomists

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## Preserve Sustainability of our Environment by Using Biosensors

Country Recognition

### SDG 13 Climate Action

This solution identifies different physiological stages of a Zosterops japonica, a small songbird, based on the sound it makes. This solution, powered by 11th Gen Intel® Core™ and optimized with Intel® Distribution of OpenVINO™, can be used as a biosensor to identify environmental pollution based on birds' tweets.

**Created by ChenHsin Lu, YuAn Shen, CheHsien Lin**
**Country/Region/Territory - Taiwan**
**Age Group: 13-18 Years**

**Target audience:**
Environment protection

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## AI-enabled Oil Spill Detector

### SDG 13 Climate Action

The Oil Spill Detector solution, trained using Intel® DevCloud, identifies real-time oil spills using satellite images. It then alerts the concerned authorities automatically.

**Created by Saanvi Tayal**
**Country/Region/Territory - India**
**Age Group: 13-18 Years**

**Target audience:**
Environmental protection agencies, oceanologists

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## WhaleScout - AI saving whales

### SDG 13 Climate Action

This AI-based solution uses Intel® DevCloud to help whales avert deadly collisions with ships. It detects the presence of whales by the sound they make and alerts them through high-frequency sounds if there's a potential collision risk. This solution will be deployed in ships using Intel® NUCs soon.

**Created by Rahul Jaikrishna, Bipul Behera**
**Country/Region/Territory - India**
**Age Group: 13-18 Years**

**Target audience:**
Whales, ship owners, crew, and whale welfare organizations

QR code to open YouTube video of project submitted by student

## Trash Sorting Technology Using Computer Vision

### SDG 13 Climate Action

This AI-based solution uses computer vision and sensors to sort trash according to its classification. This Intel-powered solution can help in reducing the negative impact caused by mixed wastes.

**Created by Hamzah Radifa Putra, Joceline Candra Kanti Tara, Indra Nur Ilham Avicena**
**Country/Region/Territory - Indonesia**
**Age Group: 13-18 Years**

**Target audience:**
People of all ages

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## Smart Flood Predicting System

### SDG 13 Climate Action

This smart flood predicting system, trained in a deep learning model, and optimized on Intel® Distribution of OpenVINO™ toolkit, has been developed to measure the rate of water flow through Intel® Xeon® processors and sensors to reduce calamities and health issues.

**Created by Lye Guan Yan**
**Country/Region/Territory - Malaysia**
**Age Group: Above 18**

**Target audience:**
People who are living in flood prone areas

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## EcoNavis

### SDG 13 Climate Action

EcoNavis makes small vessels that clean the water from lakes. Using an AI-powered system, a high-precision GPS tracking system and a digital map of the lake, it scans trash with an accuracy of 98% and collects and filters wastes from the surface of water.

**Created by Tiberiu Mihai Groza, Maria Stancu**
**Country/Region/Territory - Romania**
**Age Group: 13-18 Years**

**Target audience:**
Lake administrators, Public authorities, NGOs (Environment protection)

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16 PEACE, JUSTICE AND STRONG INSTITUTIONS

# Promote Peaceful and Inclusive Societies For Sustainable Development

The main challenges to sustainable development today are conflict, insecurity, weak institutions and limited access to justice. This is proven by the fact that the number of people fleeing war, persecution and conflict exceeded 70 million in 2018, the highest level recorded by the UN refugee agency in almost 70 years. This goal seeks to promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels.

[1]UNHCR, 'Worldwide displacement tops 70 million, UN Refugee Chief urges greater solidarity in response', June 2019

## Keep It Family Friendly (K.I.F.F)

Country Winner Award

### SDG 16 Peace, Justice and Strong Institutions

K.I.F.F is an AI-based solution that harnesses Intel® processors and a database of tweets to identify cyberbullying using the CountVectorizer object from Scikit-learn. The solution helps reduce the instances of cyberbullying.

**Created by Maya Rozenshtein, Yuval Ben Hagay, Adele Oxman**
**Country/Region/Territory - Israel**
**Age Group: 13-18 Years**

**Target audience:**
Parents and people who want to filter chat messages

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## ANTI-Scammer

### SDG 16 Peace, Justice and Strong Institutions

This AI solution aims to reduce fraud cases by identifying an account's legality with an accuracy rate of up to 96%, using Intel® solutions portfolio that includes Intel® OneAPI toolkits, Intel® Distribution of OpenVINO™ and Intel® DevCloud.

**Created by Marcus Yap, Wong Shin Chen**
**Country/Region/Territory - Malaysia**
**Age Group: 13-18 Years**

**Target audience:**
Internet user

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## HateNet: Hate Speech Detection on Social Media

### SDG 16 Peace, Justice and Strong Institutions

HateNet, powered by Intel® Core™ i5, is a web-based system for hate speech detection on the social media platform Twitter. Based on the hate speech detection results, the solution analyses and visualizes tweets to provide insights on the phenomenon.

**Created by Lim Shau Hong**
**Country/Region/Territory - Malaysia**
**Age Group: Above 18**

**Target audience:**
Human rights activists, Twitter users

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## Clickbait Restraint

### SDG 16 Peace, Justice and Strong Institutions

This solution aims to allow the user to have power over their data and recommendations without being targets of manipulation. It enables users to make more informed decisions about the content they explore.

**Created by Joshua Sinnott, Krisha Waghela, Olivia Thorburn**
**Country/Region/Territory - United States of America**
**Age Group: Above 18**

**Target audience:**
All social media users

QR code to open YouTube video of project submitted by student

# Annexure

# Acknowledgement

The efforts to equip students with the right skillset and mindset in AI have succeeded due to the active cooperation of all our partners. We extend our sincerest gratitude to our collaborators in government, academia, and civil society. Without them the Intel® AI Global Impact Festival 2022 and this resulting book would not have been possible.

We would like to thank the students who shared their innovative solutions and ideas leveraging AI. In these we see the potential to create world-changing technology that improves the life of every person on the planet. We take this opportunity to acknowledge the contribution of the parents, teachers, and academic institutions who have supported the students during this journey.

We look forward to further strengthening our engagement with all the stakeholders in 2023 and beyond, as we continue to build an AI-ready generation aware of and aligned with UN SDGs.

Apart from the thought-provoking submissions received from independent innovators, we are proud to share that, the second edition of the Intel® AI Global Impact Festival 2022 brought together a showcase of Innovative teaching-learning practices for AI skilling by 30 teachers, coaches, or and 37 best practices on AI skilling by the Government Partners, Academic Institutions, and Implementation Partners.

# Know more about UN SDGs

The Sustainable Development Goals (SDGs), also known as the Global Goals, were adopted by the United Nations in 2015 as a universal call to action to end poverty, protect the planet, and ensure that by 2030 all people enjoy peace and prosperity.

The 17 SDGs are integrated—they recognize that action in one area will affect outcomes in others and that development must balance social, economic and environmental sustainability.

Countries have committed to prioritizing progress for those who're furthest behind. The SDGs are designed to end poverty, hunger, AIDS, and discrimination against women and girls.

The creativity, know-how, technology and financial resources from all of society is necessary to achieve the SDGs in every context.




Source: https://www.undp.org/sustainable-development-goals

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