

# The Intel DataHack Open Challenge: AI for Social Good

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# AI ROLES AT INTEL



**Enabling the AI Market**



**Using AI to Make Smart Products**



**Using AI to Transform Our Own Operations**

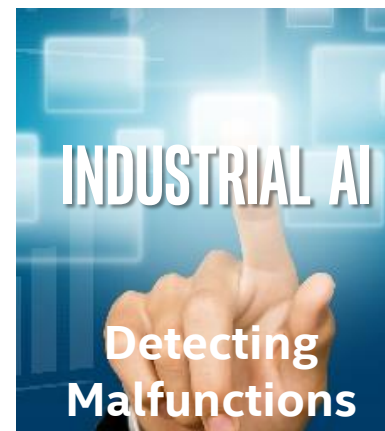
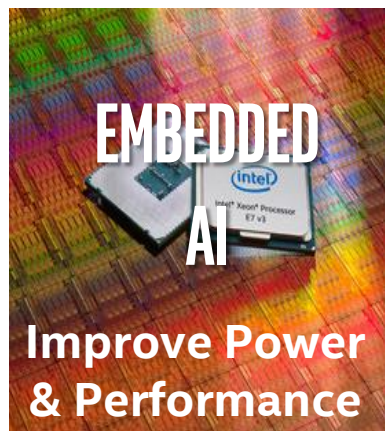
# INTEL'S ADVANCED ANALYTICS DEPARTMENT

A GROUP OF 150 DATA-SCIENTISTS, BIG DATA DEVELOPERS AND PRODUCT EXPERTS + STUDENTS  
LOCATED IN ISRAEL: PETACH-TIKVA, HAIFA, KIRYAT-GAT, JERUSALEM

## TRANSFORMING INTEL'S OPERATIONS



## BUILDING SMART PRODUCTS



Creating annual value of 100Ms \$ using Machine-Learning / Deep-Learning / NLP / RL ...



# AI FOR SOCIAL GOOD AT INTEL

Intel took a commitment to advance uses of AI that most positively impact our world

- Support social good organizations with AI technologies and expertise, to accelerate their positive work in the world
- Focusing on the fields of Environment, Healthcare and Society

kaggle™

Intel® & MobileODT  
Cervical Cancer Screening





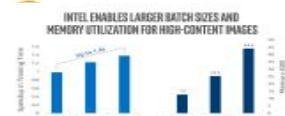
# INTEL'S AI FOR SOCIAL GOOD INITIATIVE: CURRENT PROJECTS



## HACK HARASSMENT

Intel collaborates with Vox Media, Re/code, and Born This Way Foundation on an initiative to increase inclusivity online and fight online harassment with machine learning.

→ Learn More



## CERVICAL CANCER SCREENING

Intel is partnering with MobileQOT on a competition for developing an algorithm to identify cervix types based on images, to prevent ineffectual treatment and help healthcare providers give proper referrals.

→ Learn More

→ Read the Blog



## GENOMICS RESEARCH

Intel and Synthetic Genomics, Incorporated (SGI) use deep learning to gain new insights on protein sequences tagging.

→ Read the Blog



## NCMEC

Intel works with the National Center for Missing and Exploited Children, to help automate complex image analysis to identify exploited children and suspects.

→ Learn More



## IMPROVING RADIOLOGY

CT image specialists teamed with Intel to use Intel's Deep Learning Deployment Toolkit and Intel Xeon processors for deep learning medical image solutions that can make medical imaging more affordable and more effective for diagnosing illness and assessing results.

→ Read the Blog



## SKIN CANCER DETECTION

Physicians use the Intel® Movidius Neural Compute Stick (NCS) to help with screenings for patients without waiting time. NCS has the potential to help provide medical care to people in remote locations.

→ Learn More



## FIGHT ONLINE CHILD EXPLOITATION

Intel is partnering with Thorn to create technology powered by deep learning and Intel AI tools to identify missing and exploited children in images.

→ Learn More



## PRECISION MEDICINE

An AI-based solution running on Intel Xeon processors has been deployed in hospitals for precision medicine applications for more individualized treatment. The solution helps improve the workflow of radiologists so that they may provide better care to patients.

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## BRAIN IMAGING ANALYSIS

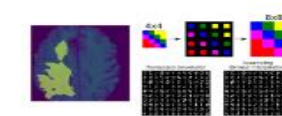
In collaboration with the Princeton Neuroscience Institute, Intel helps use software to monitor brain activity to better decode human thoughts and advance neurocognitive therapy for mental illness.

→ Learn More



## ASSISTING THE WORLD BANK

The World Bank Development Data Group utilized Intel's BigDL framework and Intel Xeon processors to classify images of household goods and services to aid the World Bank in its mission to reduce poverty and promote sustainability.



## TUMOR DETECTION

Using Intel Xeon processor-based systems to work with large medical images, deep learning is used to train models to quickly detect tumors.

→ Read the Blog



## CLASSIFYING OSTEOARTHRITIS

The Center for Digital Health Innovation (CDHI) built an AI-powered MRI classification system with BigDL Distributed Deep Learning that may help radiologists decode MRIs of potential osteoarthritis cases.



## ICEBERG CLASSIFIER CHALLENGE

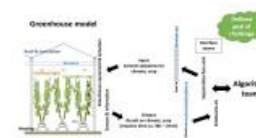
Intel won Kaggle's StatOil/C-CORE Iceberg Classifier Challenge by creating an algorithm to classify ships vs. icebergs. The ability to classify icebergs helps create safer sea travel especially in remote areas and harsh weather conditions.

→ Read the Blog



## OCEAN ALLIANCE WHALE RESEARCH

Intel and Parley for the Oceans collaborate on a noninvasive way to study whales in the oceans by collecting shot from whale blow holes using Intel ShotBots to be analyzed for stress and pregnancy hormones, viruses, bacteria, and toxins.



## AUTONOMOUS GREENHOUSE CHALLENGE/DEEP GREENS

A team of Intel AI data scientists use Deep Reinforcement Learning Algorithm for an autonomous greenhouse maximizes yield and minimizes resources.

→ Read the Blog



## GREAT WALL OF CHINA RESTORATION

Intel Falcon 8+ drones shoot high resolution aerial photographs which can be processed into highly accurate 3D models of the Great Wall of China. The AI algorithm identifies damage in the wall and provides guidance for repairs.

→ Read the Blog



## SPACE EXPLORATION RESEARCH

Researchers use Intel deep learning technologies and resources along with mentorship from Intel engineers to explore problems that may affect Earth.

→ Read the Blog

→ Read the News



## PROTECTING HALBERSTADT CATHEDRAL

Intel supported Bauhaus University to protect the 15th century Halberstadt Cathedral by using Falcon 8+ drones to capture structural data for repairs. The drones help collect the data without the risk of damage from physical contact.

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## NONINVASIVE ARCTIC RESEARCH

The Intel Falcon 8+ drone is being used to study polar bears in the arctic. The use of drones is safer for researchers and provides less threatening research methods for studying polar bears in their natural environment.

→ Learn More



## DETECTING WATER CONTAMINATION

Intel AI Academy Innovator applies AI techniques to detect harmful bacteria in water using the Intel(R) Movidius Neural Compute Stick (NCS).

See: <https://ai.intel.com/ai4good/>



# YOUR MISSION: USE AI FOR SOCIAL GOOD

- Your project may use **any** available dataset (not necessarily data we suggested)
  - Some interesting relevant datasets can be found in this public list:  
<https://github.com/shreyashankar/datasets-for-good>
- Key criteria for evaluation:
  - Potential impact on social good
  - Technical quality of the project
  - Level of innovation (in the idea and/or in the solution)
- Each member of the winning team will be awarded a prize



# The Intel DataHack Open Challenge: AI for Social Good

## Questions?



# The Intel DataHack Open Challenge: AI for Social Good

## Thank you!

