

Benefits of diverse & interdisciplinary co-creation for HEP - a showcase



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THE Future of HEP



Final decisions about our 30 year projects,
about a work generation of physicists,
are taken by 5-year term politicians

THE Future of HEP



Final decisions about our 30 year projects,
about a work generation of physicists,
are taken by 5-year term politicians

We accept this reality, but can better highlight our value

OUTREACH & Knowledge Transfer



OUTREACH & Knowledge Transfer



1
Invite Society to our
comfort zone



2
Explain our needs and
solutions

3
Connect it to benefits
of society



THE Port - swiss non-for-profit association



We demonstrate the value of fundamental science to society

CO-CREATION & Hackathons

1

Leave our comfort zone to other domains

2

Bringing our methods to societies needs

3

Connect it to our world without need to explain it



OUTREACH

together

CO-CREATION

Audience:
Supporters \Leftrightarrow Challengers

Domain:
Physic's \Leftrightarrow Stakeholders

Process:
Understanding \Leftrightarrow Experiencing

Co-creation turns Diversity & Inclusion from a moral obligation into a fundamental necessity

Challenges

5 Events
25 Challenges
+300 Participants



A private information retrieval data store	Pier42 2014 PorT	Burst-safe Food Air Drop Bag	Pier87 2015 PorT
Terrain elevation determination for refugee camps	Pier19 2014 PorT	Humanitarian Field Data, Alive!	Pier97 2015 THE PorT
The conflict zone humanitarian demarcation certificate	Pier27 2014 PorT	Improving Human Contacts In Hospitals	Pier43 2015 PorT
Tracking and demarcation system for dogs in rescue and de-mining operations	Pier83 2014 PorT	Ergonomic Protection for People Suffering from UV-ultrasensitivity	Pier33 2015 PorT
The 10\$ inflatable fridge for field operations	Pier56 2014 PorT	Big Verification Challenge - An improved way of using limited verification resources	Team 2016 Human Rights
Humanitarian Applications of an Efficient Solar Collector Device	Pier14 2015 PorT	Evidence Collection Box - A field-ready evidence collection & transportation tool	Team 2016 Human Rights
Qualitative & Quantitative Analysis of Counterfeit Drugs	Pier15 2015 PorT	Navigation for People with Visual Impairment	Team1 2016 OPEN GENEVA
Low Cost High Tech Infant Incubator	Pier20 2015 PorT	Forecasting Emergencies	Team2 2016 OPEN GENEVA
Explosions and Other Extreme Energy Event Real-Time Monitor	Pier22 2015 PorT	On-line Hospital Registration	Team3 2016 OPEN GENEVA
Rapid Production of Housing & Shelters	Pier31 2015 PorT	Health Data Collection and Handling	Team4 2016 OPEN GENEVA
Cheap, Distributed Cosmic Ray Detector	PierX2 2015 PorT	Preventing Suicide by Tech-Assisted Means	Team5 2016 OPEN GENEVA
Closing the Technology Gender Gap	Pier63 2015 THE PorT	Sensor Sock for Babies with Clubfoot	Team6 2016 OPEN GENEVA
Infrastructure-less Hospital Navigation & Transportation	Pier79 2015 THE PorT		

Diversity and Inter-disciplinarity



DiploHACK



Kingdom of the Netherlands

Human Rights

**DIPLO
HACK**

**26. - 27. February 2016
@ Impact Hub Geneva**

www.diphack.org

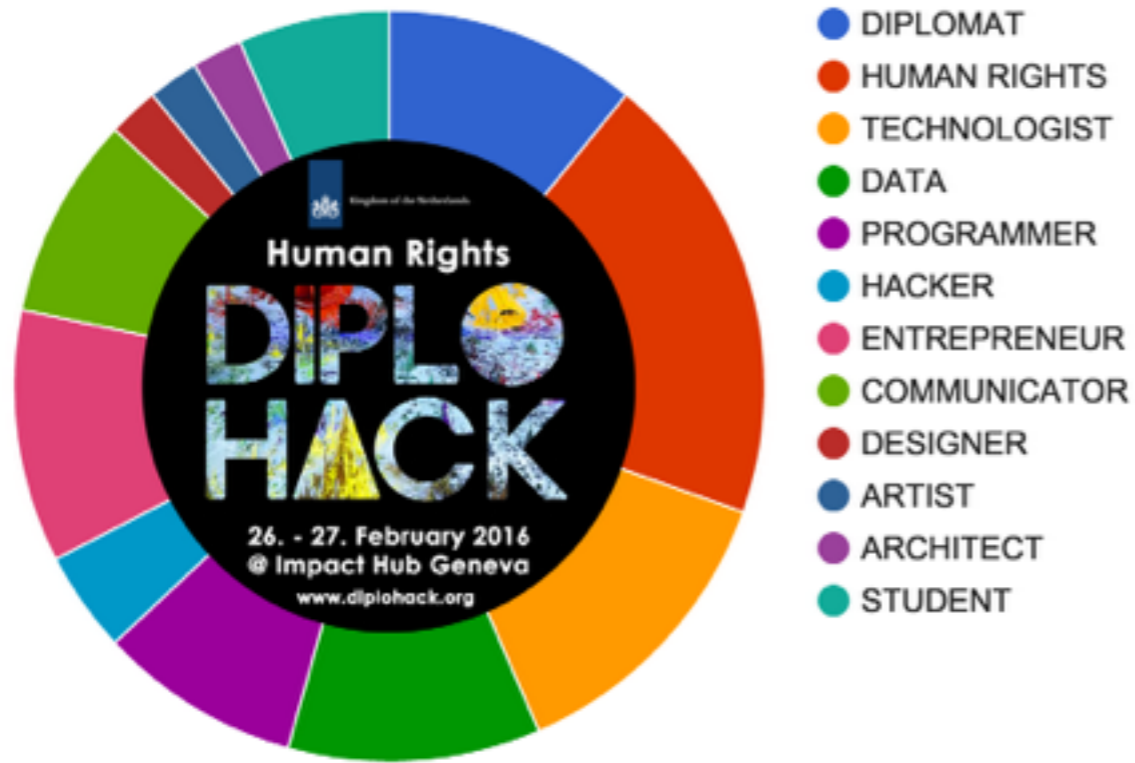
**IMPACT
HUB**

Geneva

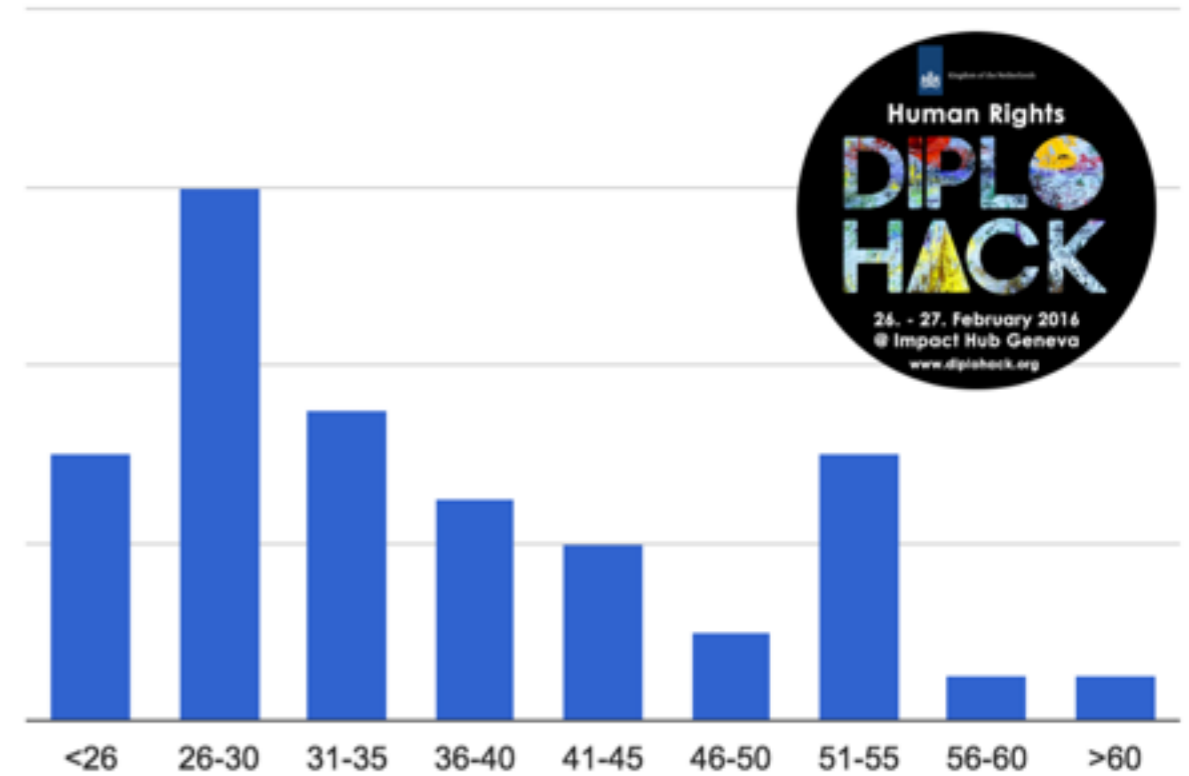
THE Port.ch
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DIVERSITY and Inter-disciplinarity

Human Rights DiploHack 2016 - Participants Background Distribution



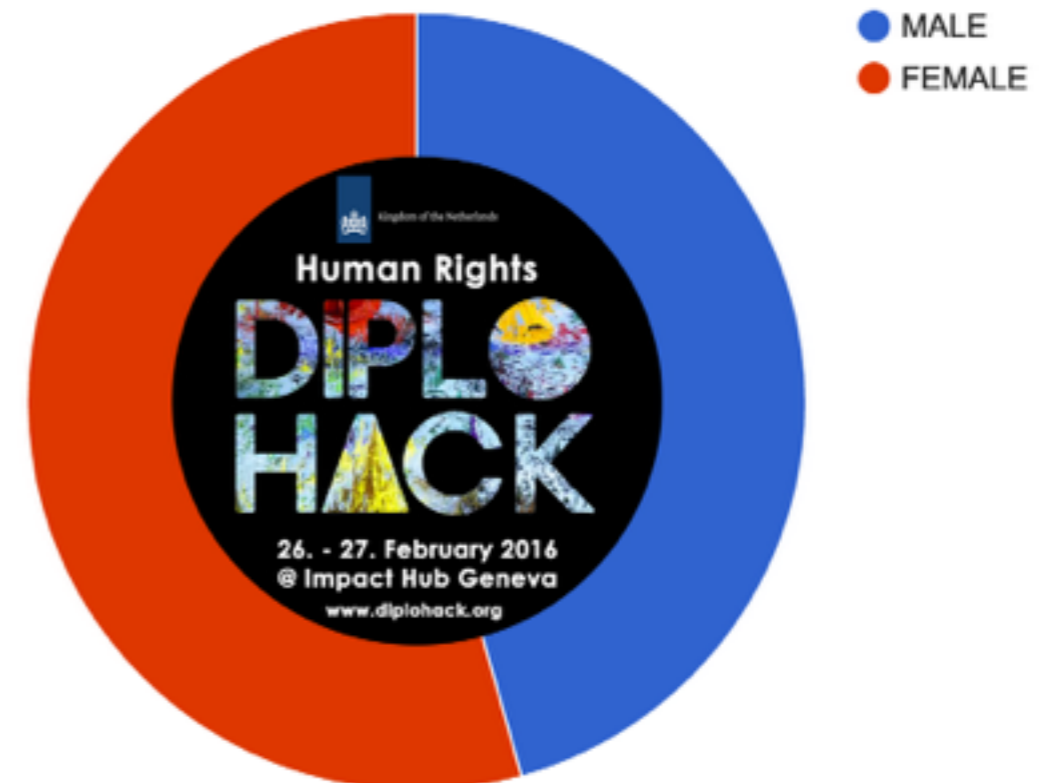
Human Rights DiploHack 2016 - Participants Age Distribution



Human Rights DiploHack 2016 - Participants Nationality Distribution



Human Rights DiploHack 2016 - Participants Gender Distribution



Better Body Bag

Keeping semiconductor detector dry
&
Allowing ICRC Forensic teams to
longer visually identify dead bodies
have very similar needs



WORLD
HUMANITARIAN
SUMMIT



CODEV

TEDx Lausanne
x = independently organized TED event

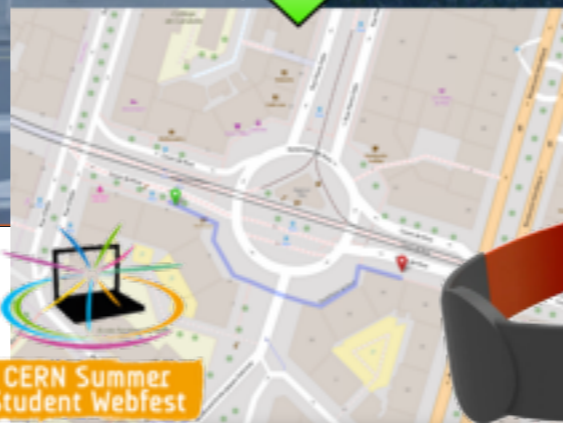


<http://socialsolutionsresearch.com/>

Blind Navigation



#neuralnetworks
#openData
#tracking



<http://simetka.cz/OGH/>

Sonification of ROOT

Higgs

Marimba

Mar.

The image shows a musical score for two instruments: Marimba and Maracas (labeled 'Mar.'). The score is titled 'Higgs'. It consists of two staves. The top staff is for the Marimba, and the bottom staff is for the Maracas. The Maracas part is written in a 2/4 time signature and features a rhythmic pattern of eighth notes. The Marimba part is written in a 2/4 time signature and features a melodic line with eighth notes. The score is projected onto a large screen in a lecture hall.





PICTRUE

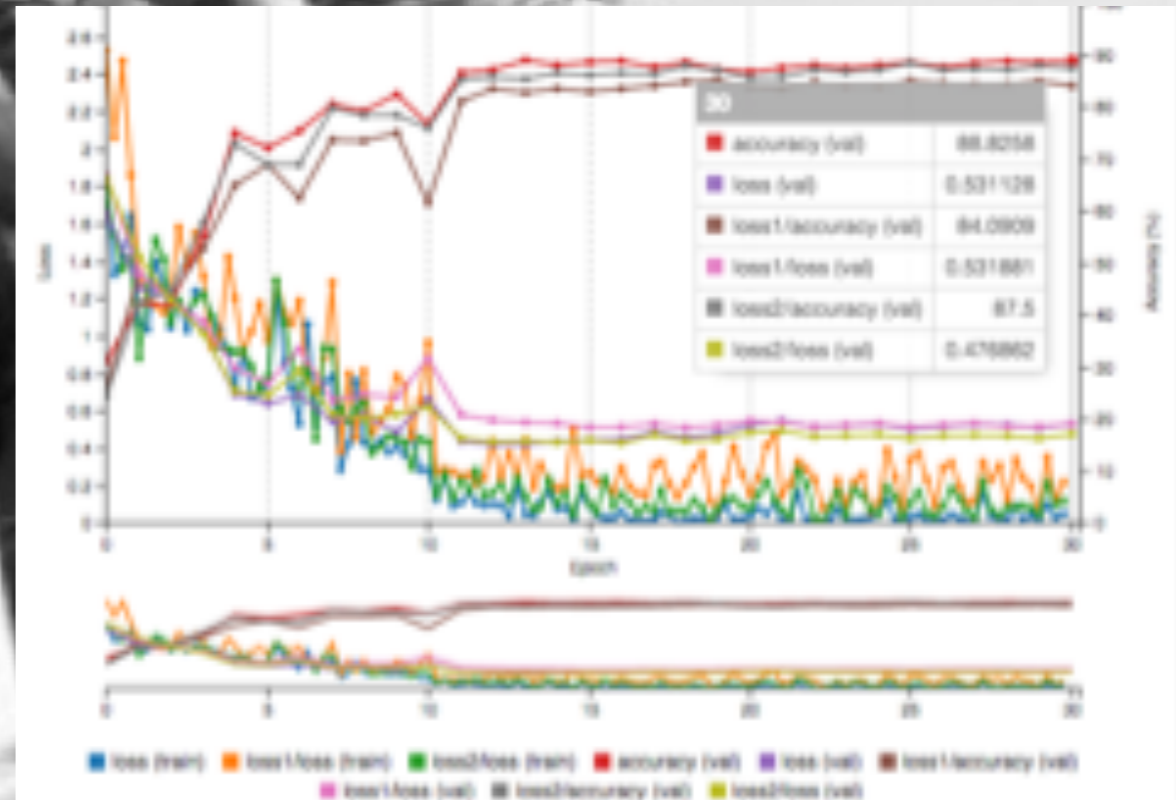
-

machine learning algorithm identifies if
& what kind of Human Rights violation
happens on any picture & video



Self-learning Assessment Framework for Rights (SAFR)

- integrated tool **incrementally improves** filtering, sorting & verifying images
- based on previous data, tool **increases capacity** to corroborate evidence from as many data sets as possible
- shifts human rights framework **from reactive** model **to proactive** model



Machine Learning Image Pattern Recognition



99.99% child classroom
 0.01% none
 0.0% child soldier
 0.0% child labour



58.2% child classroom
 31.6% child soldier
 8.1% child labour
 1.9% none

DATA & DATA & DATA



e3emonitor.ch



wildtreetech.com

#BigData

#openData

#block-chains

#DeepLearning

#NeuralNetworks

#NaturalLanguageProcessing



DATASAURI

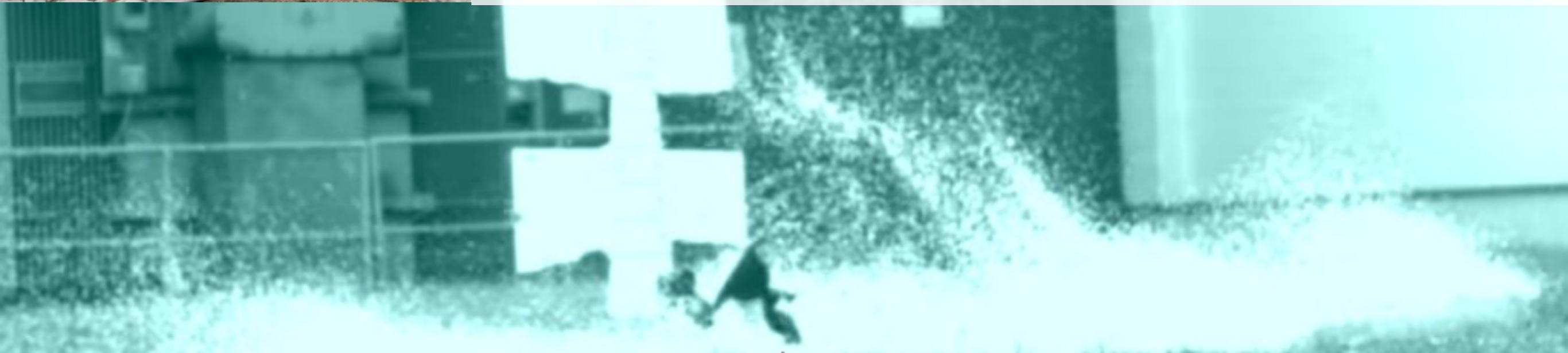
datasauri.org



UNOSAT



Analysing $6.2e+8$ TeV rice dijet events is humanitarian innovation for ICRCs air food drops In South Sudan



RED! INNOVATION

THE Port
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HRC31 - Bert Koenders & Kate Gilmore



“We have to innovate diplomacy.”

Bert Koenders

“Human Rights 2.0”

Kate Gilmore

H. E. Mr. Bert Koenders
-
Minister of Foreign Affairs
of the Netherlands



“Never forget, always share and act in solidarity.”

Kate Gilmore, Deputy High Commissioner for Human Rights

“We need you, we need innovation for the cause of human rights!”

Bert Koenders, Minister of Foreign Affairs of the Netherlands



DIPOHACK - Testimonials



“This small group of individuals hacked into the future where rights are respected.”

Kate Gilmore, Deputy High Commissioner for Human Rights



UNITED NATIONS
HUMAN RIGHTS
OFFICE OF THE HIGH COMMISSIONER

Children with UV Hypersensitivity



John Ellis



Jorge Cham



Luca Parmitano



LHC startup & Higgs discovery
are highlights of my life

using these methods to impact &
save children's life became my
complementary passion

Diverse co-creation is a great tool



Daniel Dobos

@HScienceAdvisor

Global Humanitarian Lab (GHL)



A humanitarian innovation “CERN” is forming
We are looking for additional academic partners
@HumanitarianLab

