Robotics:
a humanitarian science

Rescue Robotics, Demining, Artificial prosthesis

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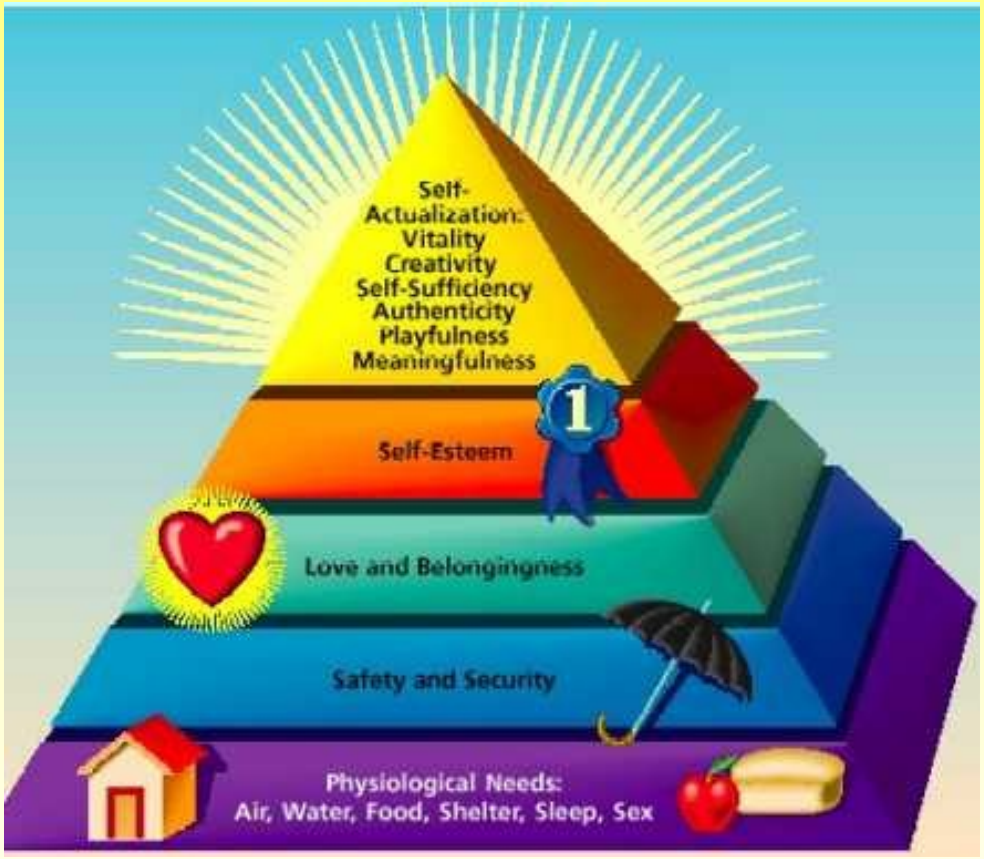
"There's a great truth in the image where we are only but survivors on a futureless planet"

"... but even in shipwreck human dignity and their values do not necessarily perish and it is our duty then, to guard them at best. We may sink, but nevertheless let's make it happen in such a way that we can consider as worth of humankind..."

(N. Wiener)

Maslow's Hierarchy of needs



How can robotics help humankind?

 Demining

 Artificial Prosthesys

 Rescue Robotics

 Security

Rescue Robotics

After Septmeber 11 Carnegie Mellon increases foundings to research in Rescue Robotics. During operations in Ground Zero Robin Murphy used robots to search survivors. Japan spends many resources in the improvement of its rescue robotics sector (Hirose's Lab)

In case of terrorist's attacks and natural catastrophic events man ask robotics to lend him an hand.

Security

To grant safety of the industrialized world has now become an always more strict necessity.

Many nations increased foundings to design and realize "ward robots".

Research in this field will be strongly push forth.

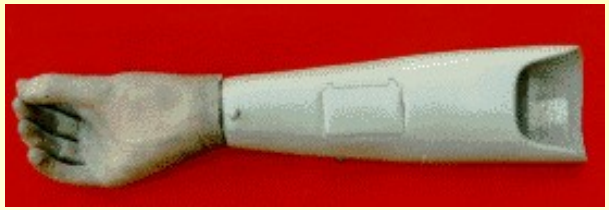
Demining

Tens of millions of mines lying active in more than 80 countries in the world, most of which are under developed countries.

200 millions of mines stored in military arsenals;
one mine each 48 inhabitants of the planets and worst, one each 16 children;
1 victim each 20 minutes;
90 per cent victims are civilian;
20 per cent are children;
2000 victims pro months and 26000 victims pro year

Artificial Prosthesis

Civil wars in under developed countries **MEAN** mines everywhere. This aso means thousands of citizens suffering from lifelong invalidants injuries (legs and arms)



Nevedac Electronic
Hand - India

How can robotics become a humanitarian science?

Solid Grounds

High accessibility to data allows research to reach a real sharing of the HW & SW knowledge bases.

This is the real road of sharing, the same that software production fields is already walking along, **this** must be the common road both for high and low cost research projects (mainly for those addressed to the Third World).

Easy to use

Humanitarian technology will be used also by non-technical people. It has to be SIMPLE and EASY.

Scientific robotics community must try to avoid to design products with high degree of complexity of use and hard to be transferred.

Is this possible? Let's ask us HOW

Open Source philosophy

OpenSource philosophy strongly contributed to the development of software. Why should the same philosophy not help robotics as well?

Many experiments already use the same hardware bases and freely develop their control algorithms.

Can we step any further? Can hardware be designed and developed in the same way we design and develop software?

Finally...

Humanitarian robotics MUST have the following features:

Low costs

Ease of use

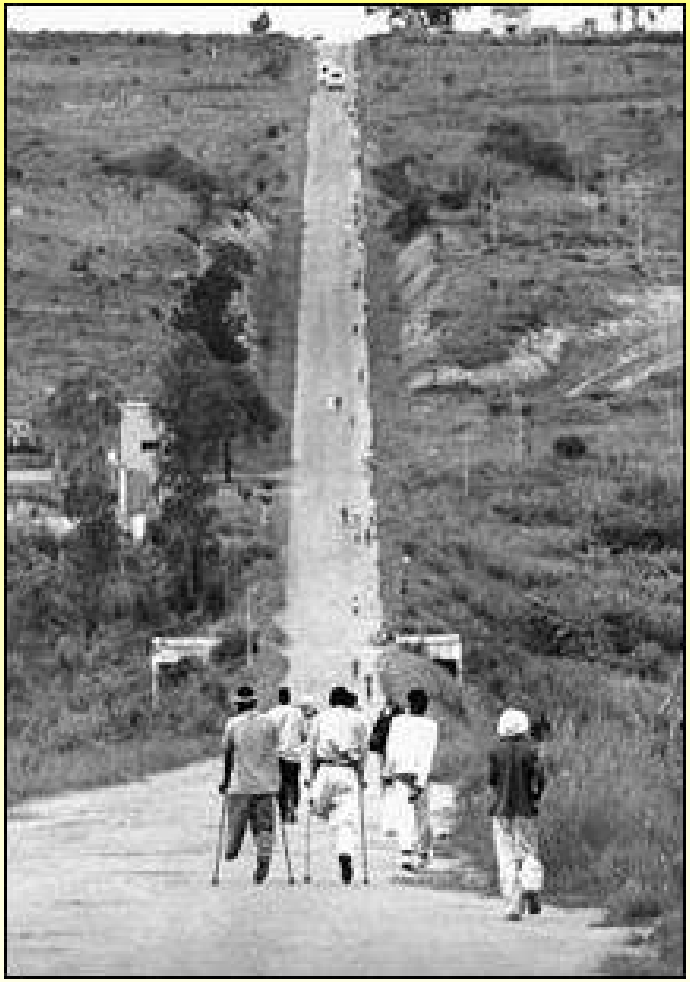
Transferability

Open Source

Humanitarian technology must be able to easily enter this "bottega":

Picture kindly offered by: Olivier Fermariello ©

The Long and Winding Road



Thanks to all of you.

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