Artificial Intelligence for Human-Machine Interaction

Microsoft Health Innovation Awards

SLUSH UPI CHENDU

Health 2.0 Le Scienze TEDxRoma WIRED

“Le nuove tecnologie per l’inclusione”
Giovedì 16 maggio 2019 – ForumPA 2019

Pasquale Fedele
p.fedele@braincontrol.com
@pascalif @brainctrl
Degenerative neuromuscular diseases, ischemic or traumatic injuries causes paralysis and communications problems.
Thanks to BrainControl many patients have been able to regain the possibility to communicate after months or years…
BRAINCONTROL WORKS LIKE A MENTAL JOYSTICK

Artificial Intelligence

Machine Learning

Brain-Computer Interface

Artificial Intelligence

CONTROL

Communicator

Domotic control

Wheelchair and Robotics

(Our proprietary software)
3 MAIN PROBLEMS

Patients
- Non severe
- Severe
- LIS
- CLIS

Augmentative Alternative Communication tools
- AAC 1
- AAC 2
- AAC 3

Functional/Cognitive Assessment tools

1. Technological void for most LIS patients
2. Lack of personalized and adaptive solutions
3. Lack of tools for precise diagnosis

Lack of tools for precise diagnosis
SMART MULTIMODAL PLATFORM

Our Disruptive Innovation

- Augmentative Alternative Communication
- Functional/Cognitive Assessment
- Robotics

- It fills a technological void for LIS patients
- Effective Cognitive/Functional Assessment tool

- Smart Multimodal Platform for AAC

Innovative

- BCI

Modular

- Motion
- Eye-tracking
- Voice
AVATAR

Multimodal Interaction

Augmentative Alternative Communication

Remote control

@brainctrl
Imagine you were able to control objects through your mind.

[VIDEO]
https://goo.gl/uLD2wF
300,000 patients with physical disabilities in Italy

Difficulties/impossibilities to perform/complete tasks autonomously with digital services
DIGITAL SERVICE 4ALL

Phase I

180,000
Patients with tetraplegia/LIS able to use a pointer (e.g. Eye Tracker)

Phase II

120,000
Visually impaired and LIS+/CLIS

VIDEO: https://goo.gl/1VnxJD
Delivery of the kit

Assessment and trainings
- Remote, online
- 1-2 sessions for LIS and less severe patients
- Up to 6 sessions over 2 months for CLIS patients

REMOTE ASSESSMENT AND TRAININGS

Training session
Up to 40 minutes
Reimbursements from NHS (IT) and B2B buyers (EU)

Reimbursement of the cost from the National Healthcare System

60+ Patients paying out of pocket

20+

100%

Class I medical device

PATENTS
- IT102015000052009 (GRAANTED)
- PCT/IB2016/055442 (NATIONAL PHASES)
- NEW (ONGOING)

TM Braincontrol®

EFFECTIVE TRACTION
Together with these results we have obtained the CE mark. We are the first CE medical device on the market based on BCI technology.
Papers & Publications

- P. Fedele, M. Gioia, “Results of a 3 years study of a BCI-based communicator for advanced ALS patients”. In Proceedings of the International Society for Augmentative and Alternative Communication (ISAAC) 2016
WE ARE LOOKING FOR

- Large corporations in the healthcare/IoT/Automotive/Industrial market
- Distributors of high tech assistive technologies
- Neurologists, speech therapists, occupational therapists
- LIS, ALS, MND, Stroke and others patients associations
- Professionals and patient associations