Health++
The Future of Medicine

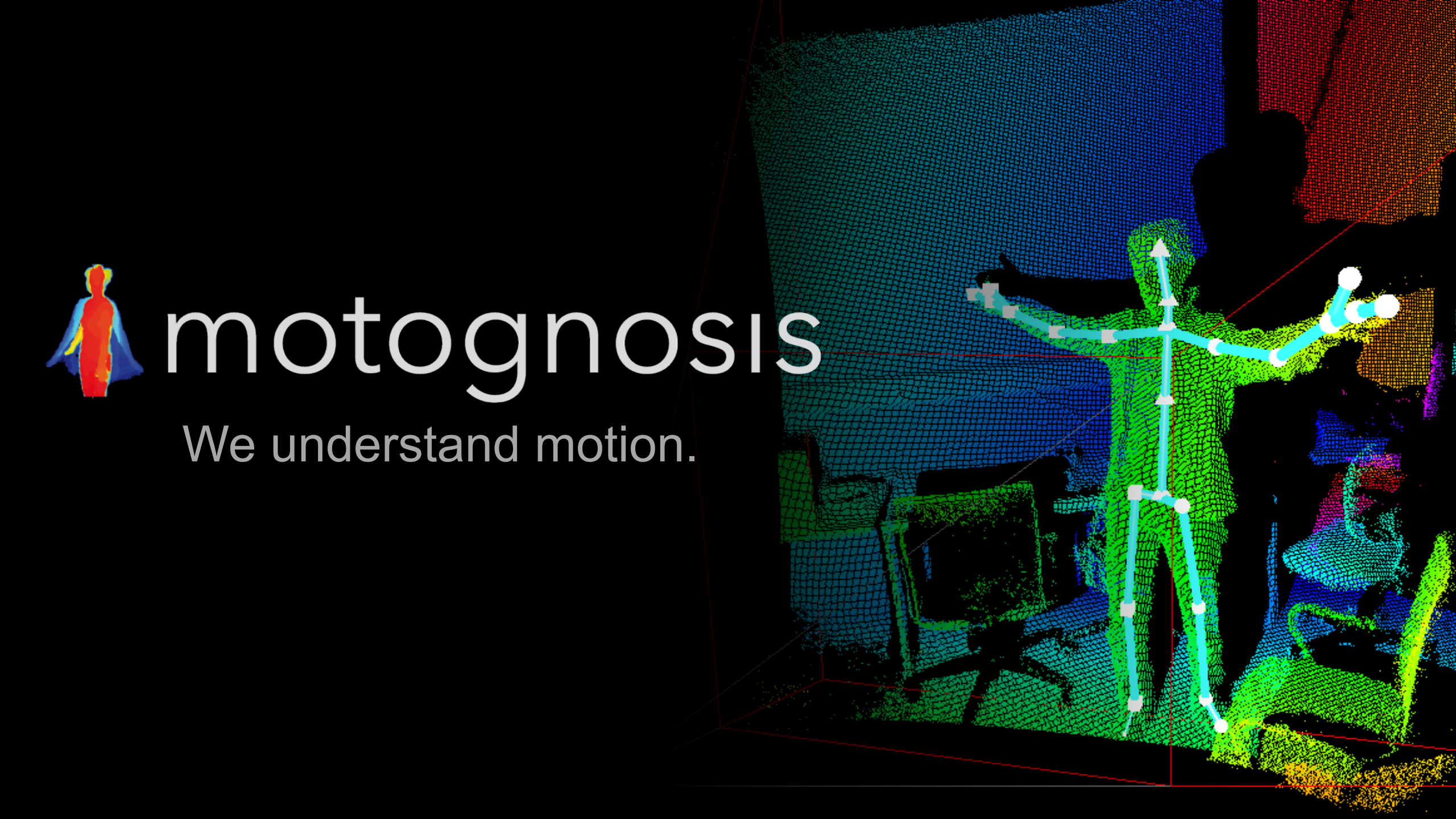
// Author: Karen Otte
// Date: 16.11.2017

WELCOME TO
RAPTURE
NO GODS OR KINGS. ONLY MAN.

Me, myself and the Cat.

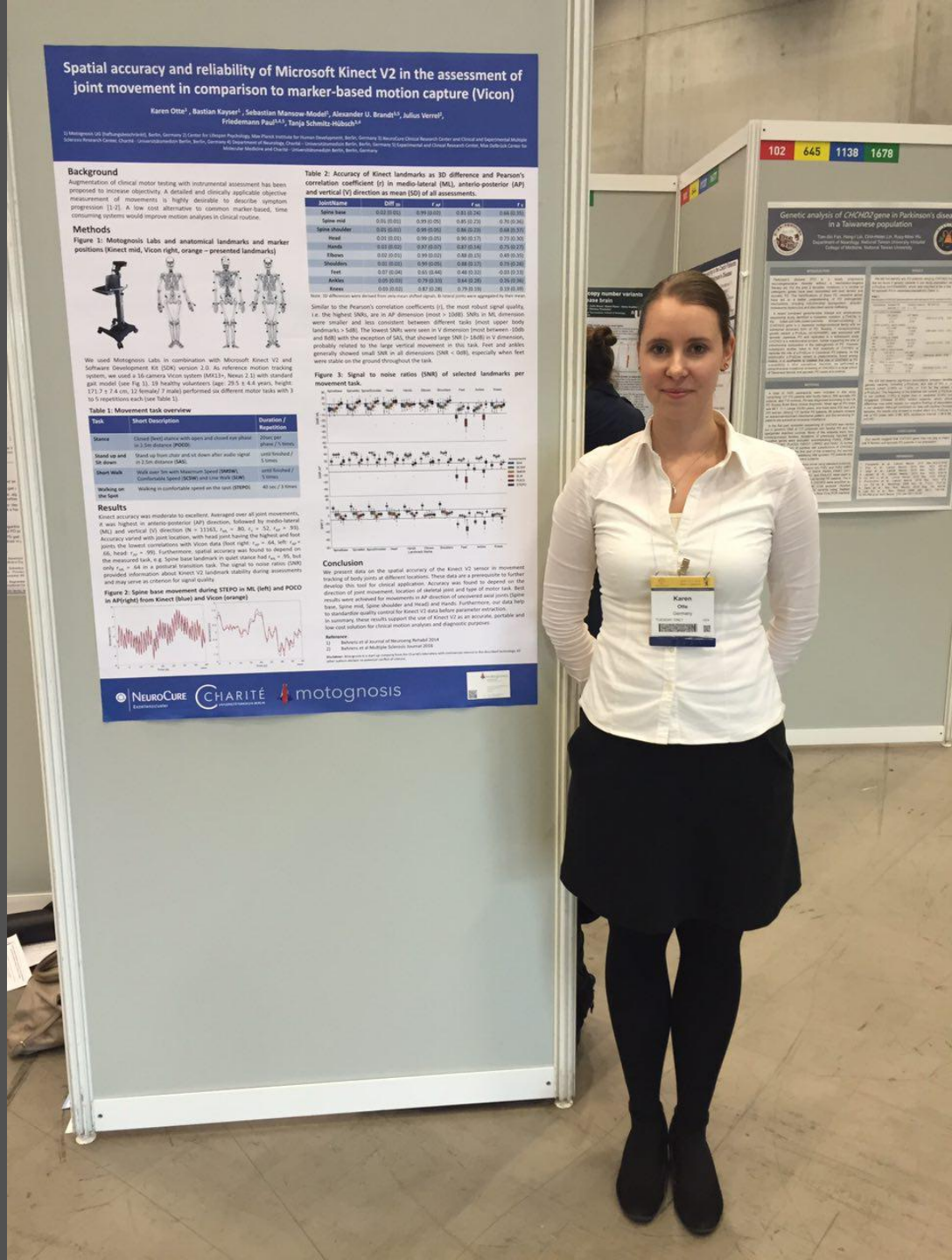
motognosis

We understand motion.



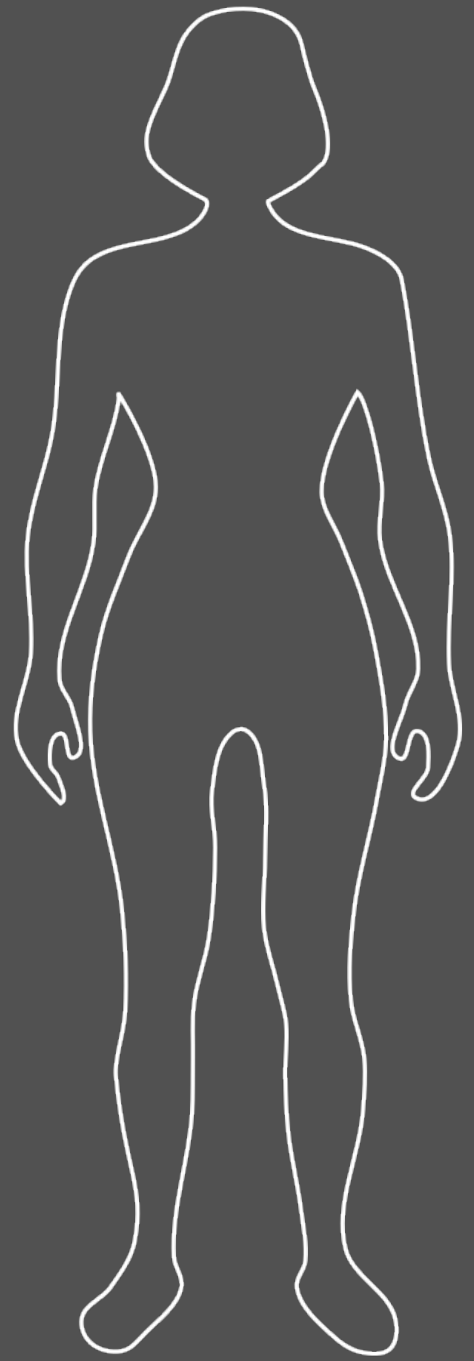
CHARITÉ

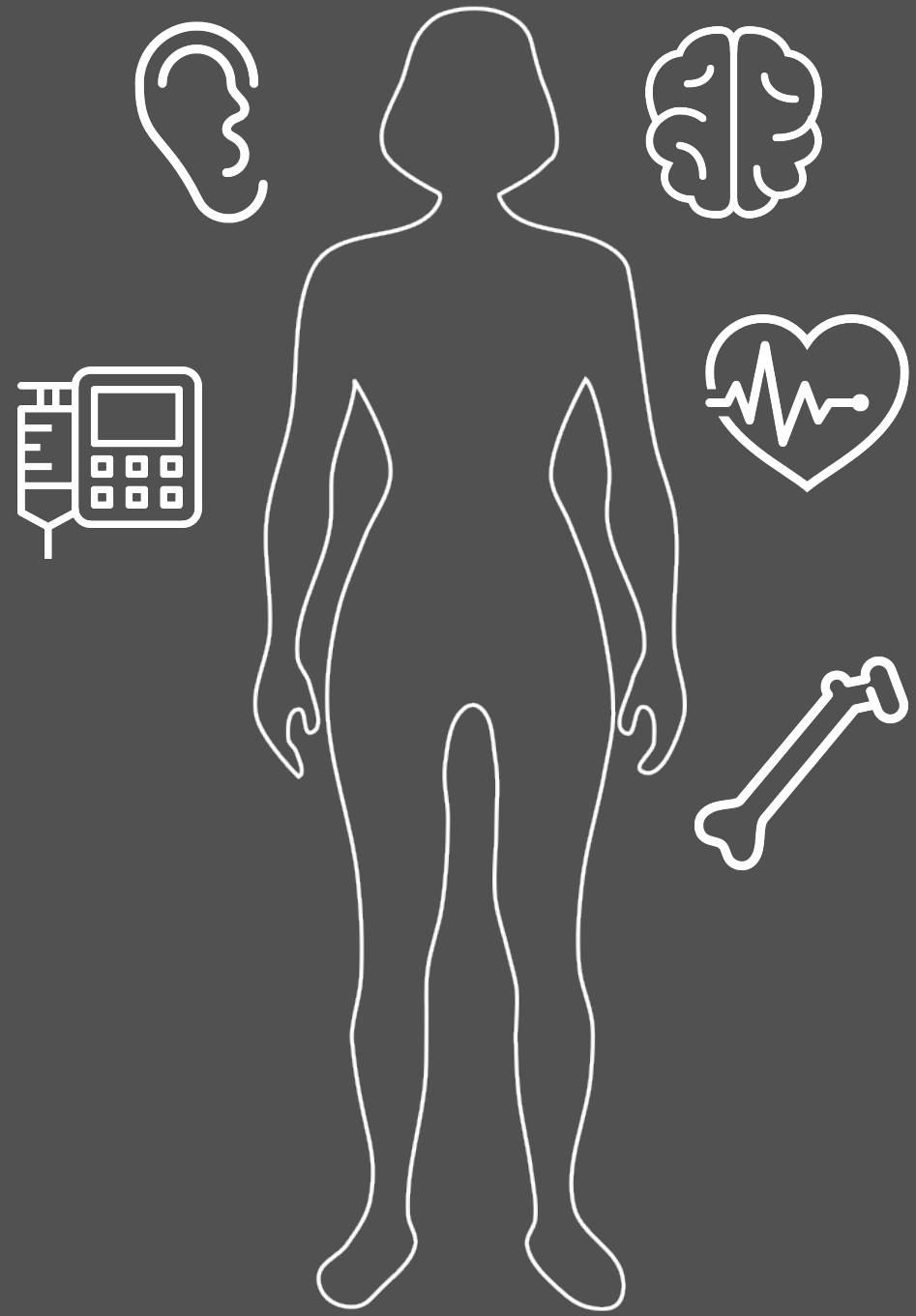
UNIVERSITÄTSMEDIZIN BERLIN

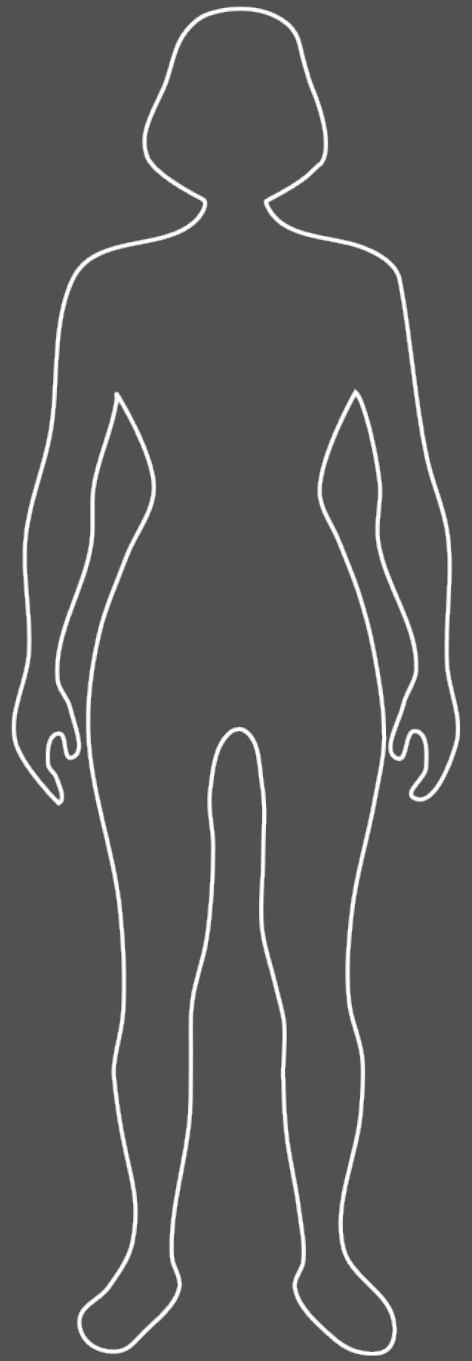


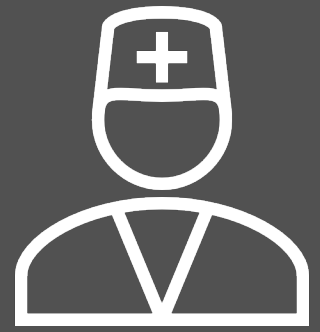
Spot, you are disrupting
my ability to work.

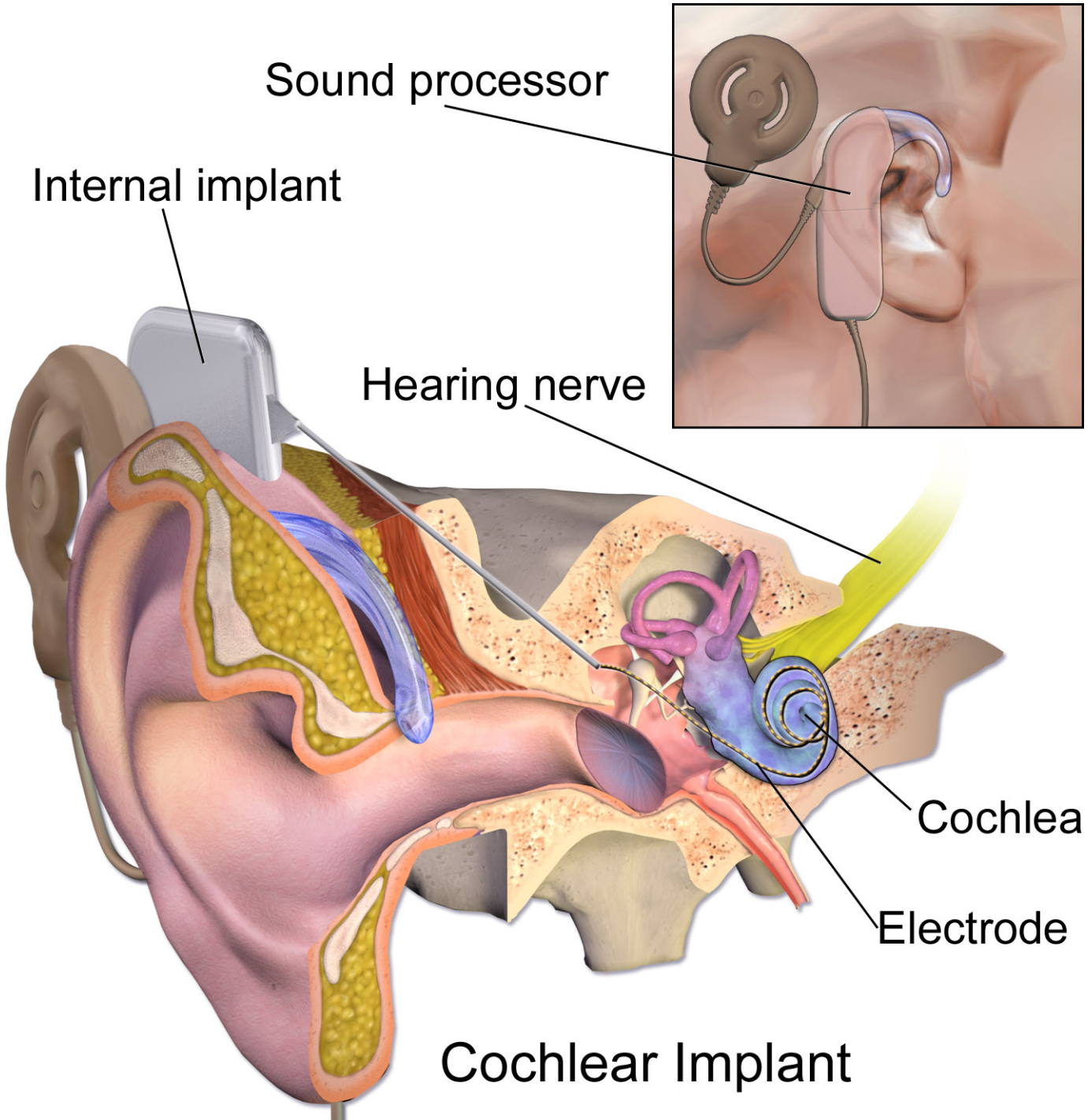
Dialysis? My god, what is this?
The Dark Ages?
STAR TREK IV
THE VOYAGE HOME

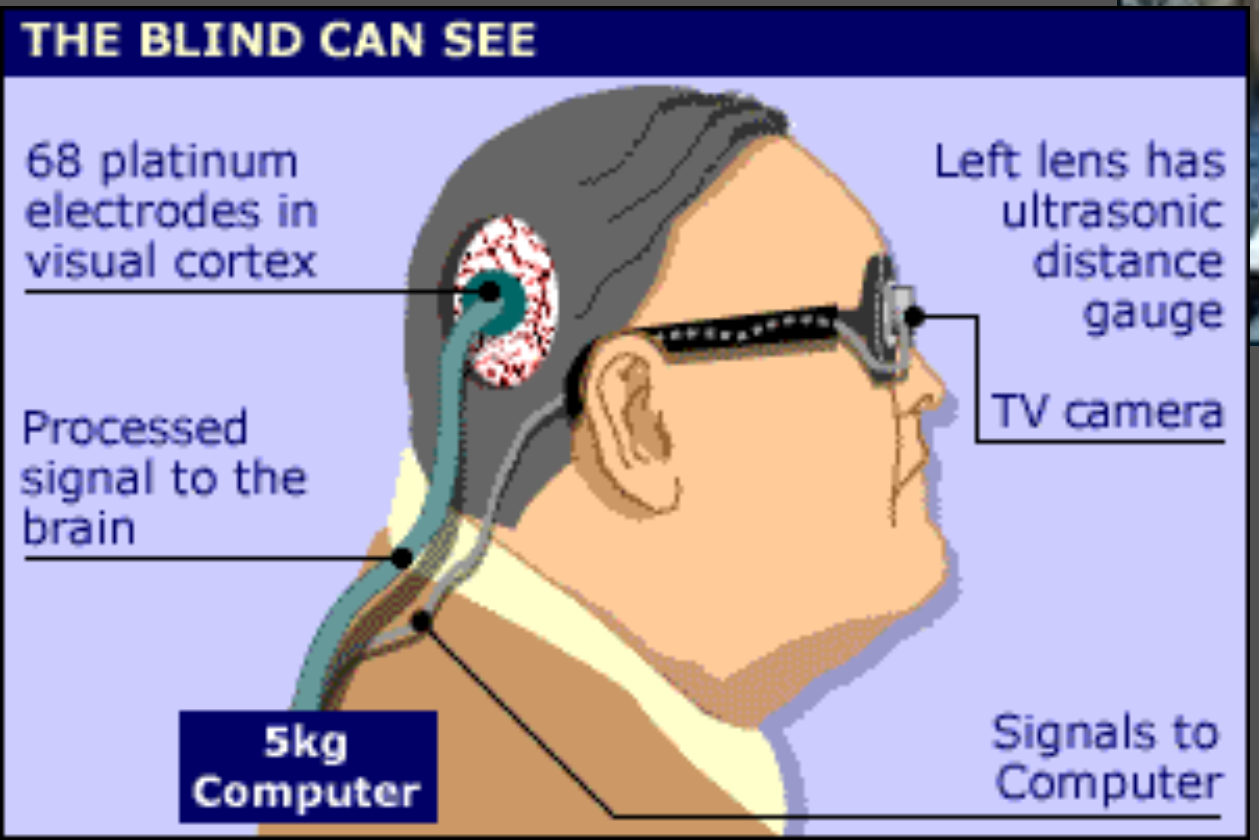




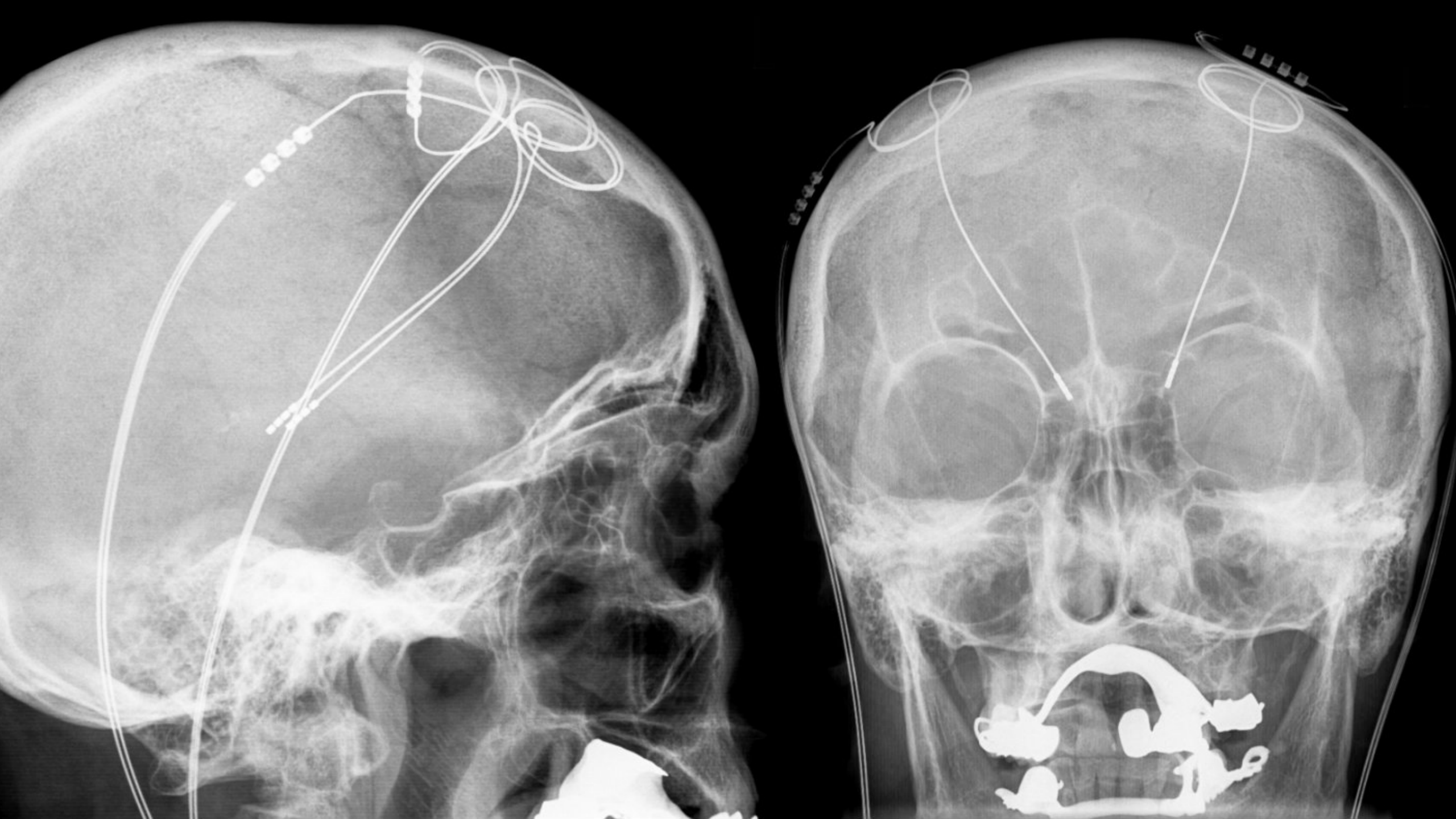


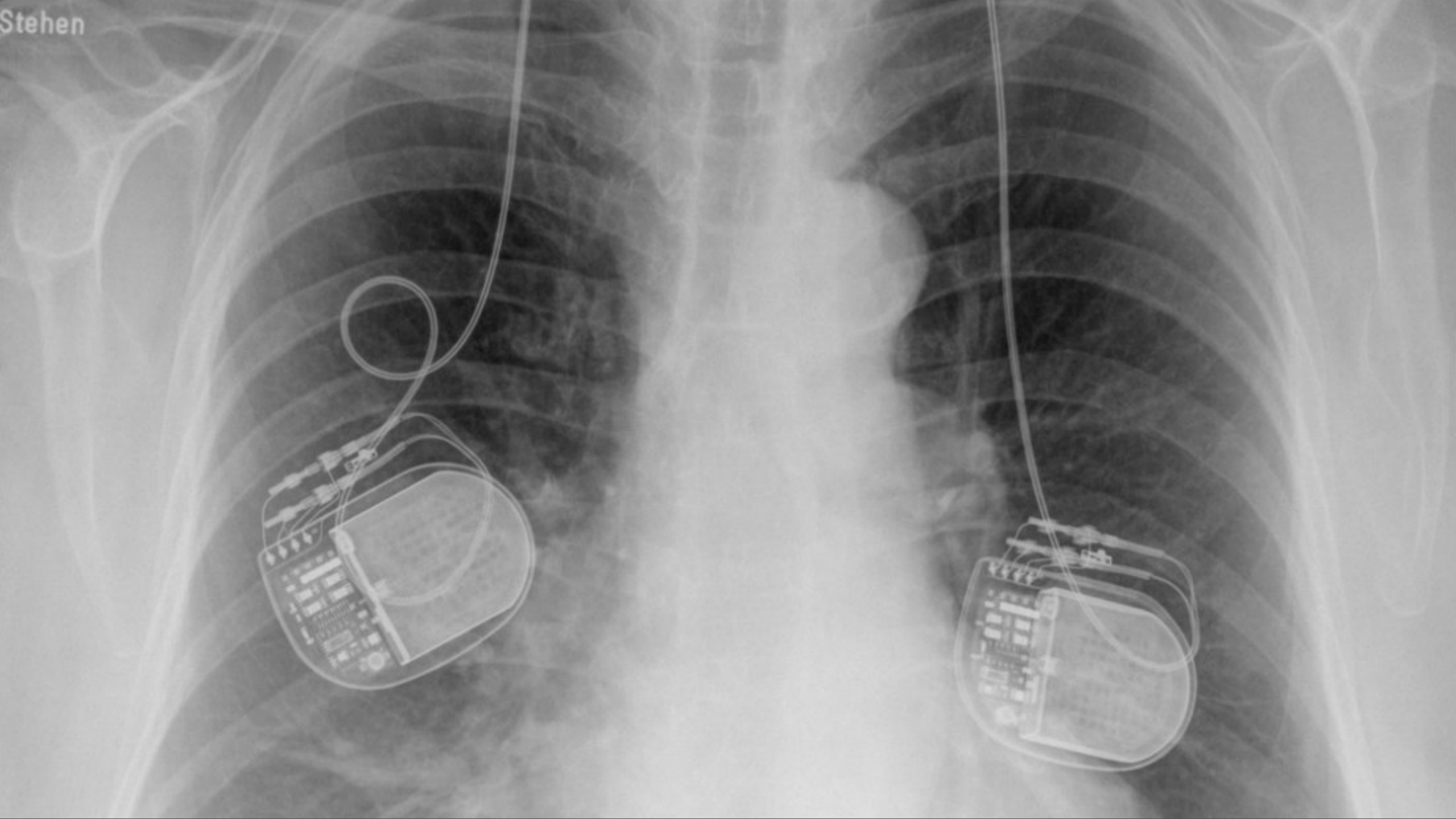


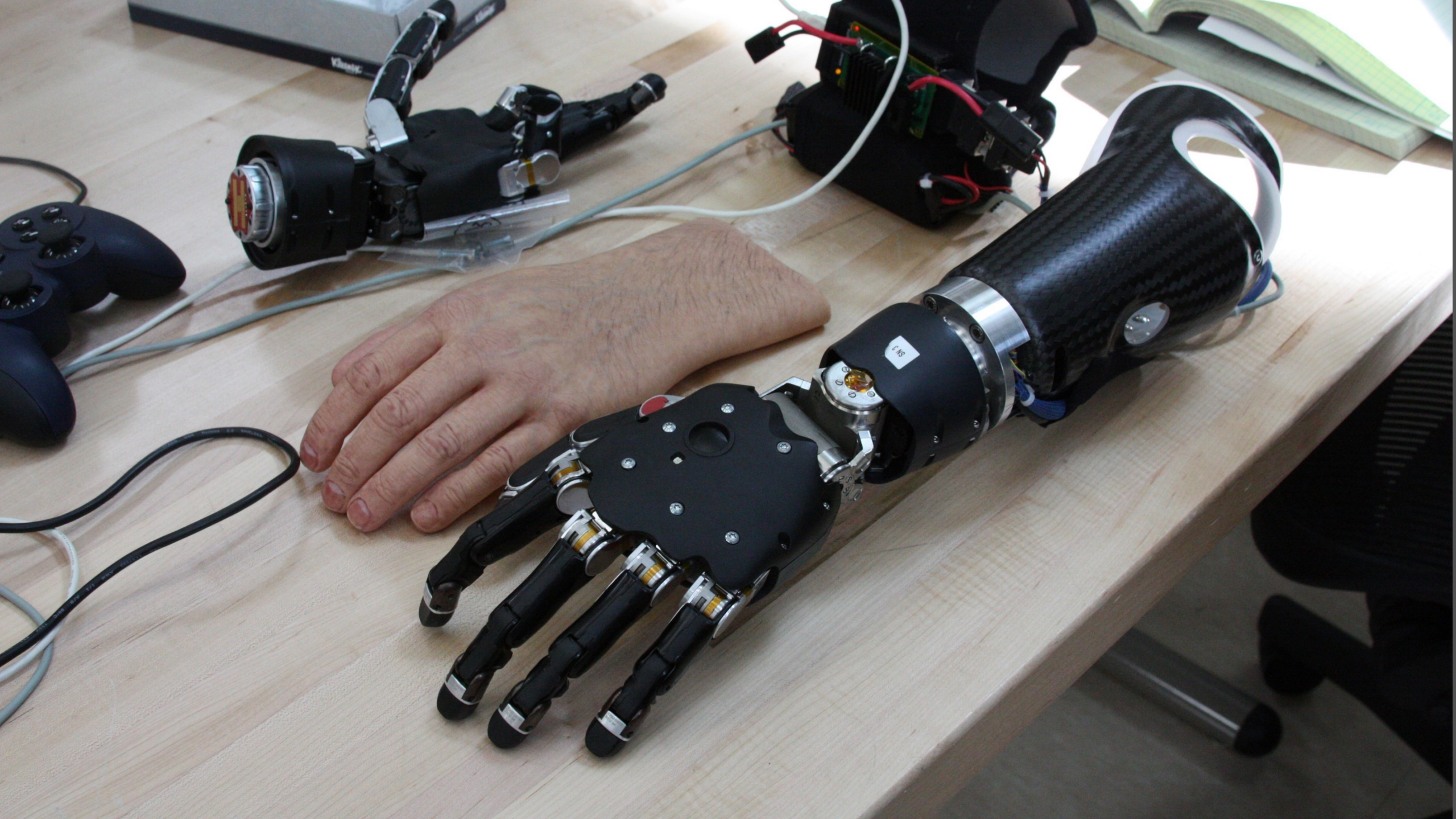

Sound processor
Internal implant
Hearing nerve
Cochlea
Electrode
Cochlear Implant

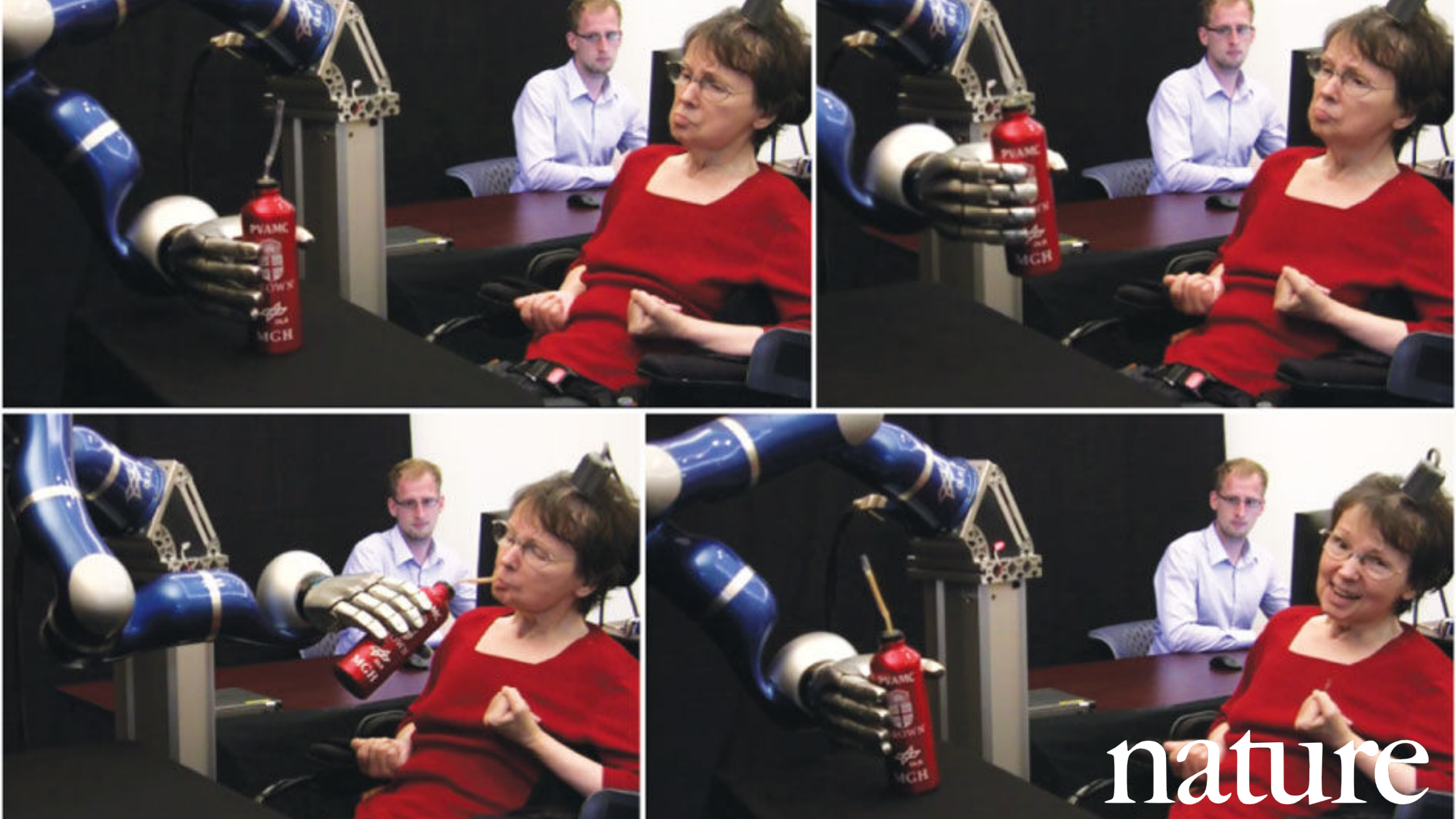

THE BLIND CAN SEE
68 platinum electrodes in visual cortex
Left lens has ultrasonic distance gauge
TV camera
Processed signal to the brain
5kg Computer
Signals to Computer

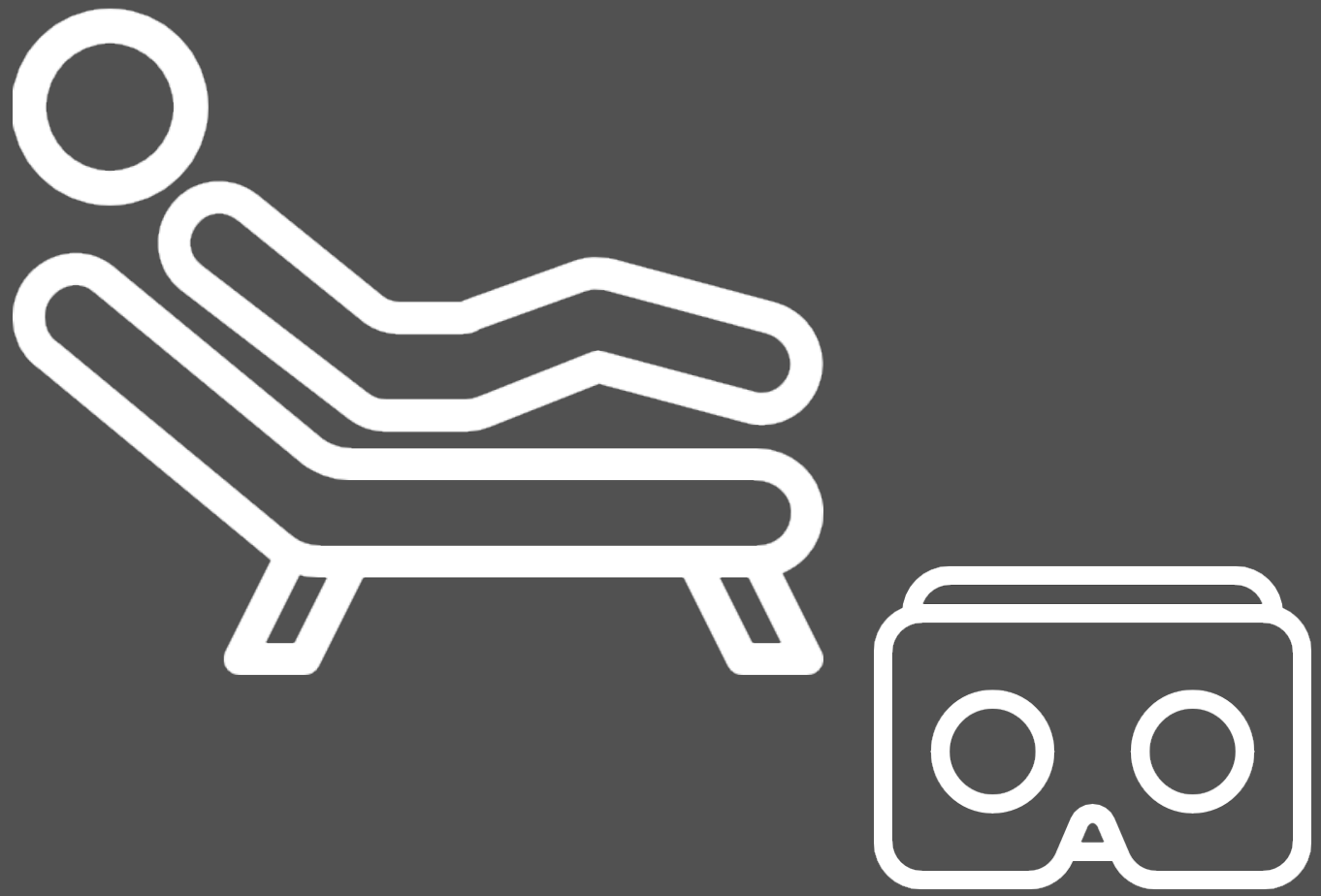
Google
NOVARTIS

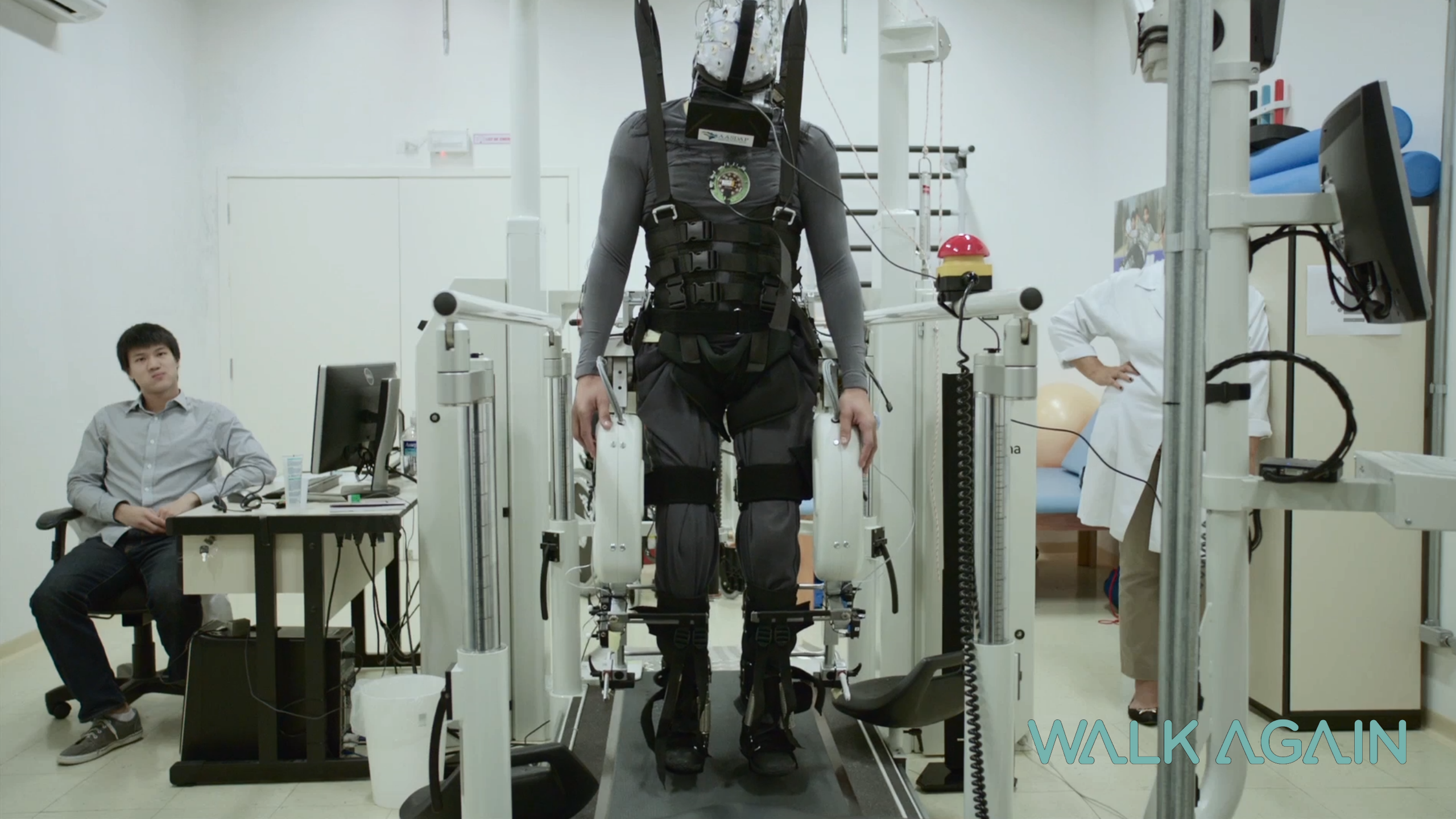


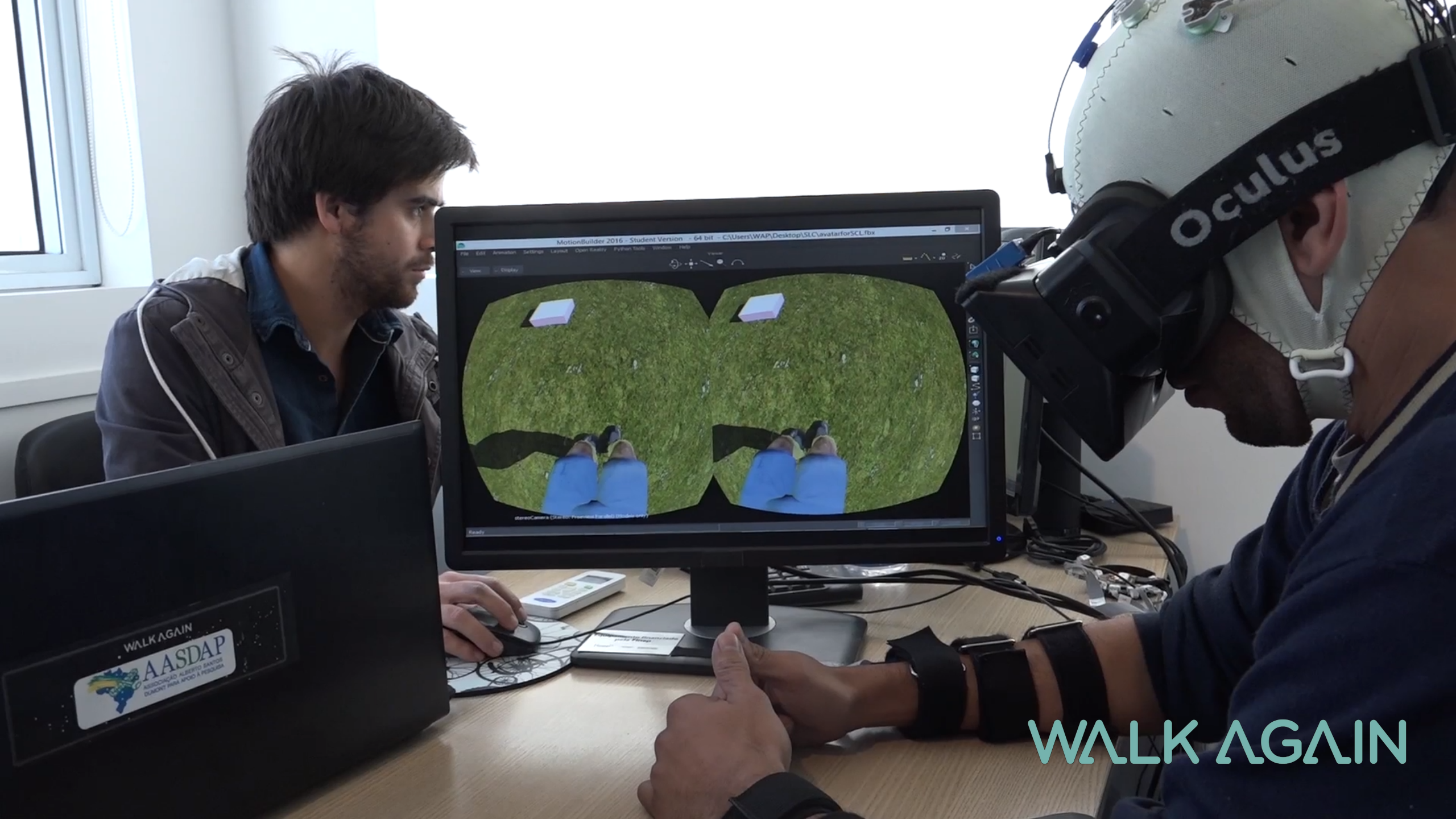

Stehen




nature




WALK AGAIN


MotionBuilder 2016 - Student Version - 64 bit - C:\Users\WAP\Desktop\SLC\avatarforSCL.fbx
Oculus
WALK AGAIN
AASDAP
WALK AGAIN

SCIENTIFIC REPORTS

OPEN

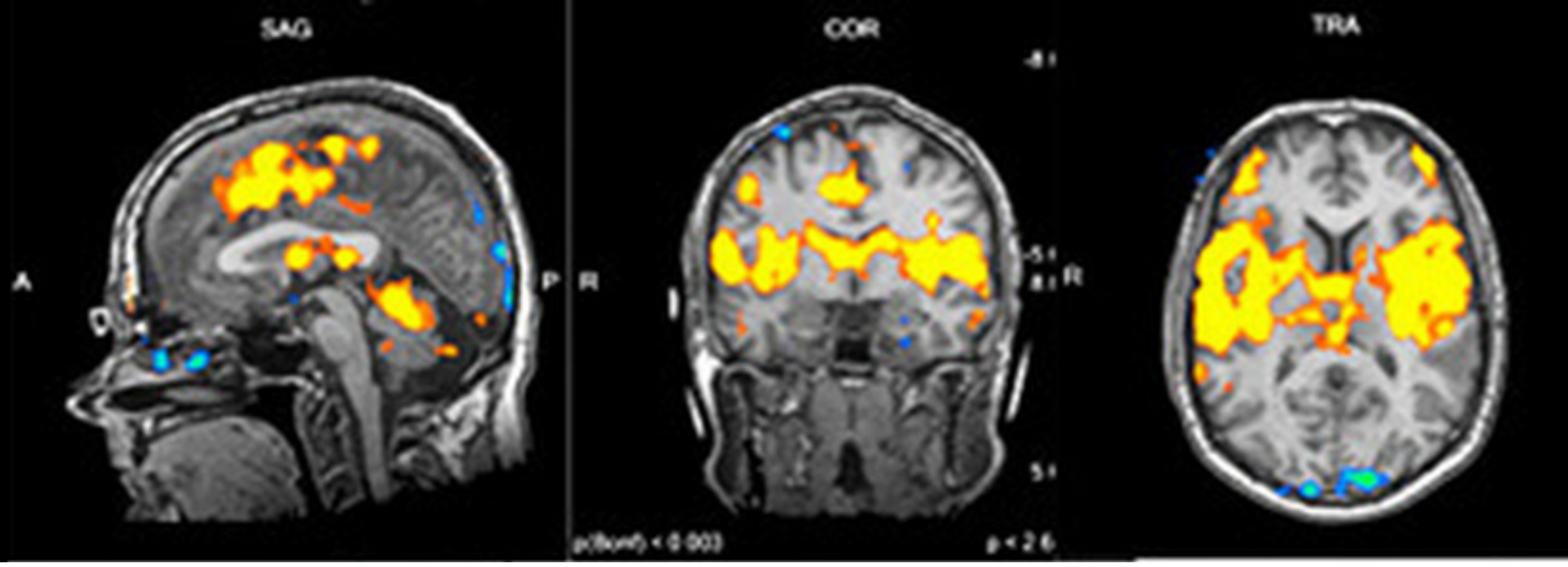
Received: 21 April 2016
Accepted: 04 July 2016
Published: 11 August 2016

Long-Term Training with a Brain-Machine Interface-Based Gait Protocol Induces Partial Neurological Recovery in Paraplegic Patients

Ana R. C. Donati[1,2], Solaiman Shokur[1], Edgard Morya[3,4], Debora S. F. Campos[1,2], Renan C. Moioli[3,4], Claudia M. Gitti[1,2], Patricia B. Augusto[1,2], Sandra Tripodi[1,2], Cristhiane G. Pires[1,2], Gislaine A. Pereira[1,2], Fabricio L. Brasil[3,4], Simone Gallo[5], Anthony A. Lin[1,6], Angelo K. Takigami[1], Maria A. Aratanha[3], Sanjay Joshi[7], Hannes Bleuler[5], Gordon Cheng[8], Alan Rudolph[6,9] & Miguel A. L. Nicolelis[1,3,6,10,11,12]

SAMSUNG
#BeFearless

VR OFF



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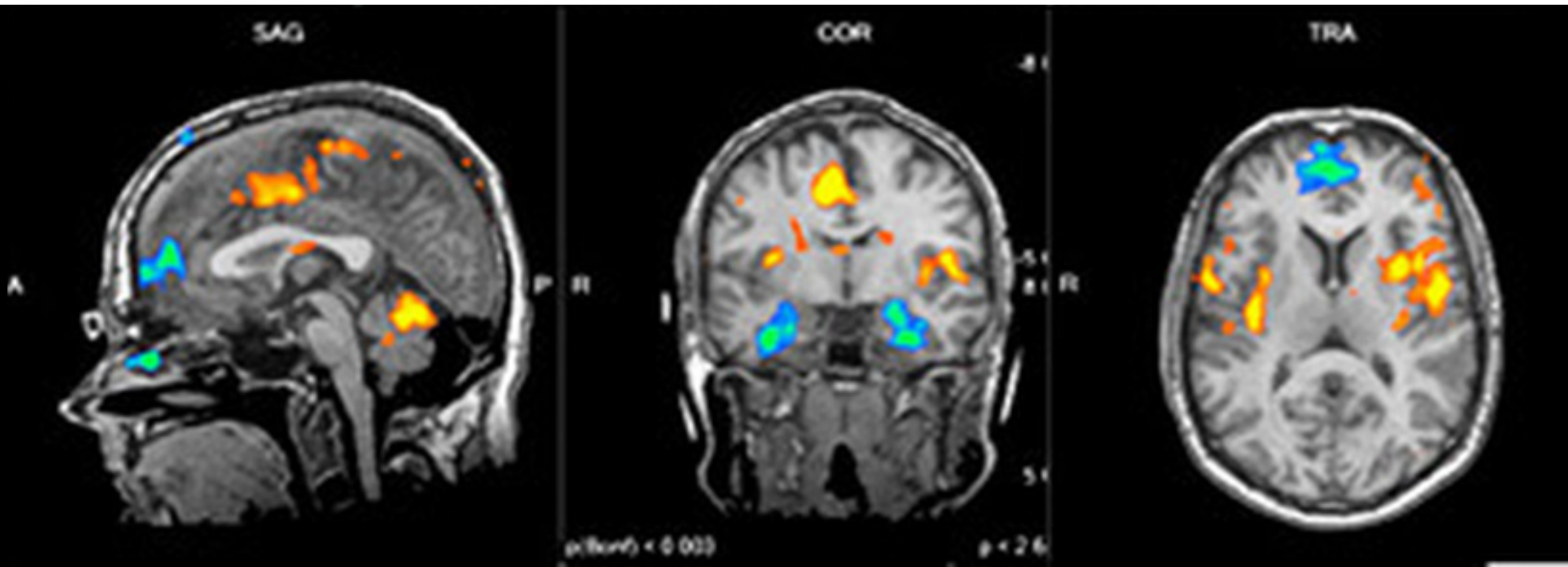

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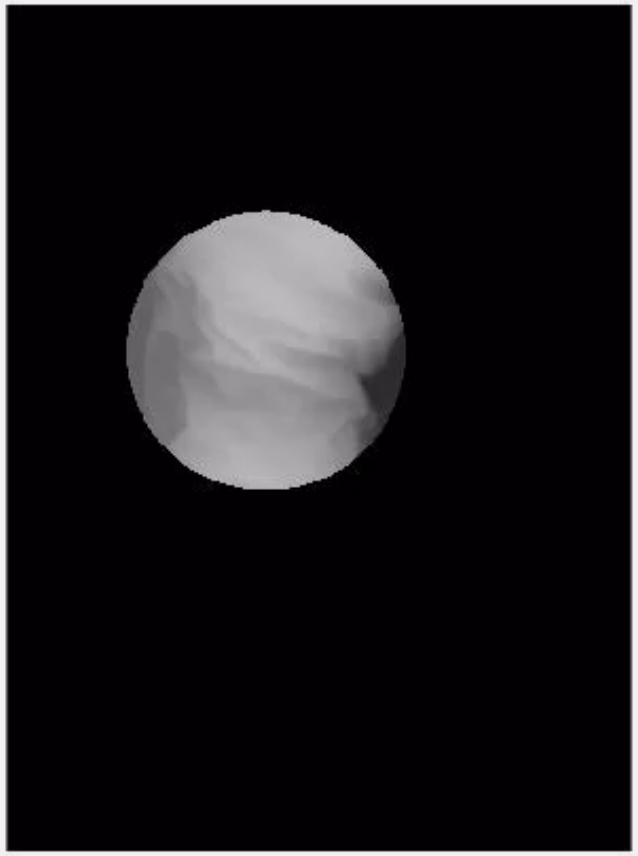

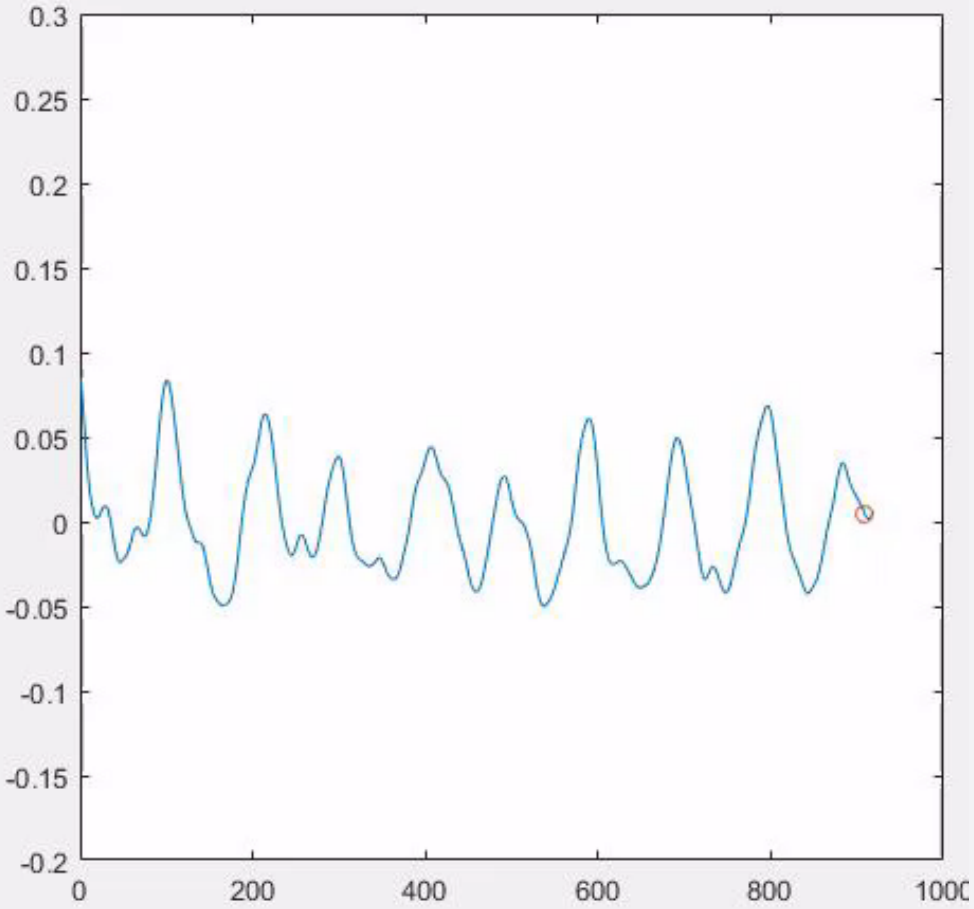
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0.2
0.15
0.1
0.05
0
-0.05
-0.1
-0.15
-0.2
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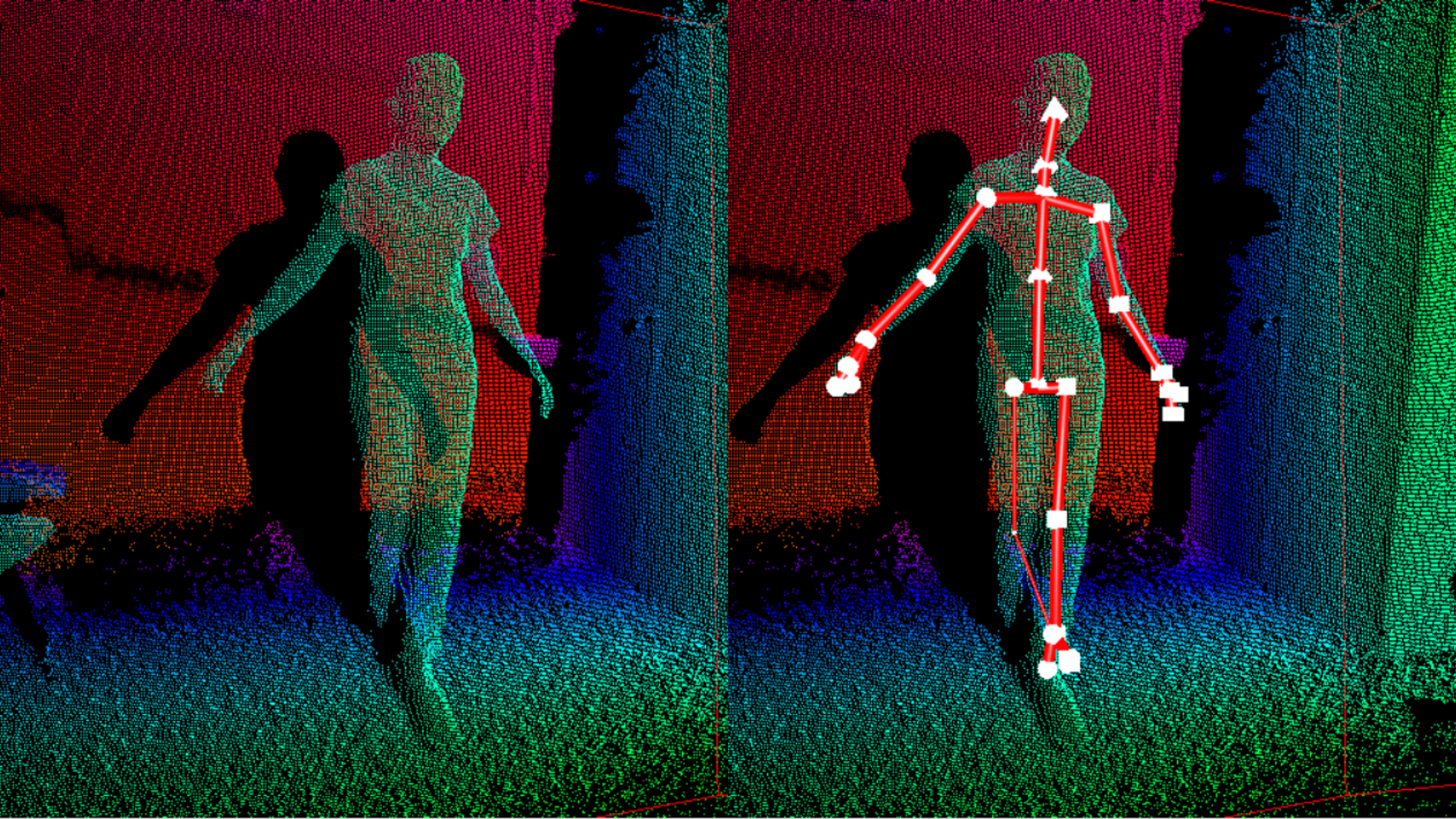
600
800
1000



Messung - POCO - Posturale Kontrolle
Marta Musterfrau; Visit1 - SMM
04.11.2017 14:29
Messung starten

Medicine Meets Virtual Reality 22
J.D. Westwood et al. (Eds.)
IOS Press, 2016
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doi:10.3233/978-1-61499-625-5-167

Automated Tracking and Quantification of Autistic Behavioral Symptoms Using Microsoft Kinect

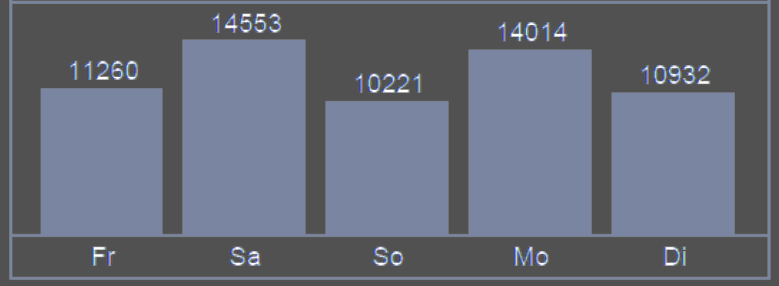
Joon Young KANG[a], Ryunhyung KIM[a], Hyunsun KIM[a] & Yeonjune KANG[a], Susan HAHN[a], Zhengrui FU[b], Mamoon I. KHALID[b], Enja SCHENCK[a] & Thomas THESEN[a,c]
[a] *Department of Neurology, New York University School of Medicine*
[b] *Department of Electrical Engineering, New York University*
[c] *Department of Radiology, New York University School of Medicine*

fitbit

Gesamtenergieverbrauch

Tagesdurchschnitt
12196 kJ

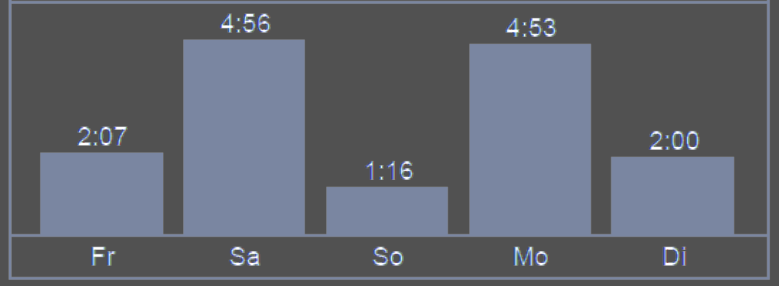
Gesamt
60979



Dauer der körperlichen Aktivität
(3,0 METs)

Tagesdurchschnitt
3:02

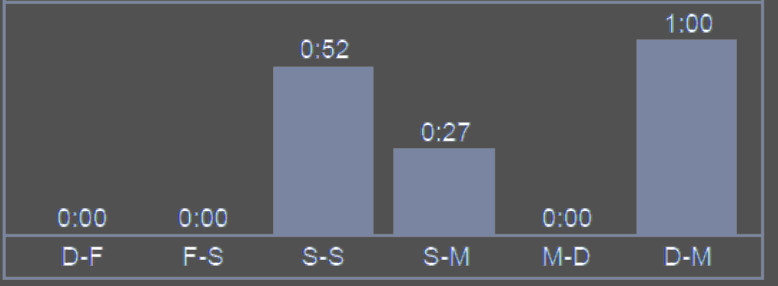
Gesamt
15 hrs 12 Min



Liegend
(Mittag bis Mittag)

Tagesdurchschnitt
0:23

Gesamt
2 hrs 19 Min



Aktiver Energieverbrauch
(3,0 METs)

Tagesdurchschnitt
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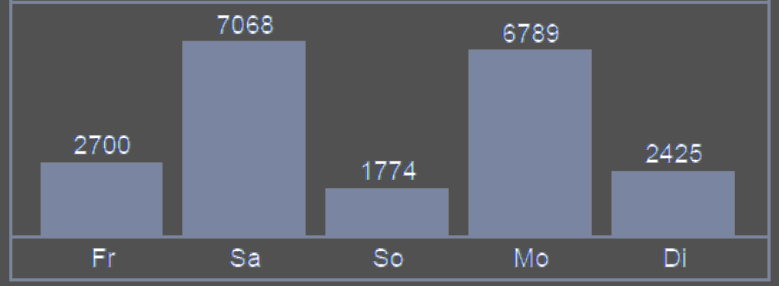
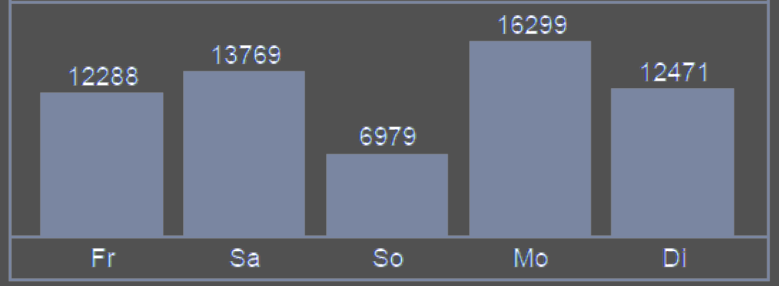
Gesamt
20756



Anzahl der Schritte

Tagesdurchschnitt
12361 Schritte

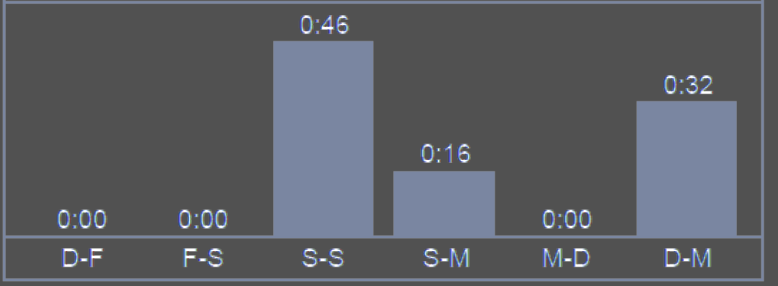
Gesamt
61806



Schlafdauer
(Mittag bis Mittag)

Tagesdurchschnitt
0:16

Gesamt
1 h 34 Min



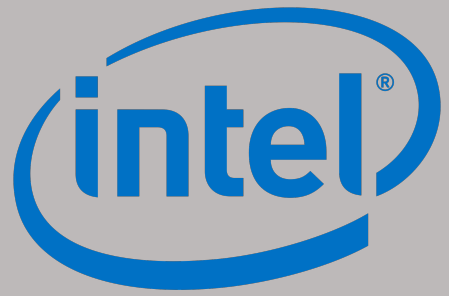
“It […] can monitor a person’s **eating, drinking, coughing and even social habits**, […] could be useful when treating someone dealing with obesity, diabetes, asthma or even depression.”
MICHIGAN STATE
UNIVERSITY

DATA
CATS: ALL YOUR BASE ARE BELONG
TO US.

ALL YOUR DATA ARE BELONG TO US

ORACLE

Google


intel

facebook

fitbit

GE

Pfizer

IBM

NOVARTIS
Google

SAMSUNG
Medtronic
Alleviating Pain · Restoring Health · Extending Life

Roche

QUALCOMM®

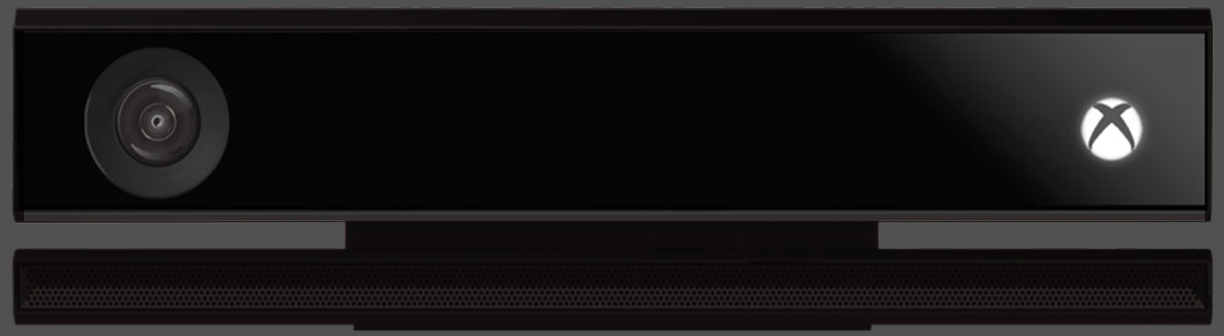
Microsoft

NOVARTIS

From gaming system to medical breakthrough: How Microsoft and Novartis created Assess MS

Microsoft

NOVARTIS



Microsoft

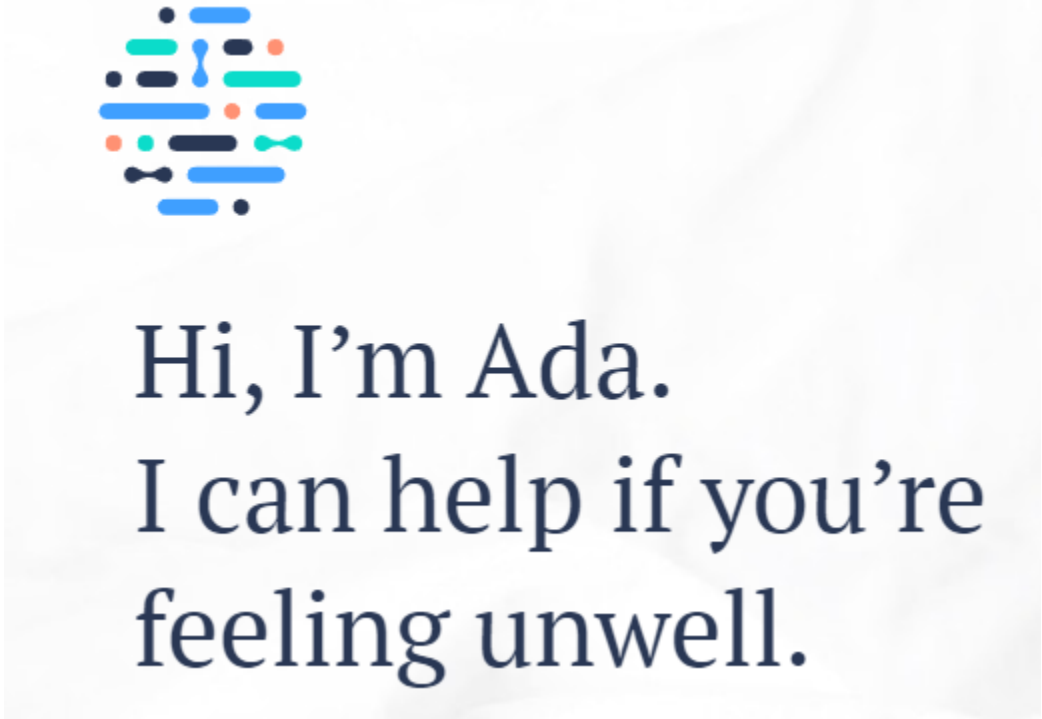
DxtER
by Final Frontier Medical Devices

1. iPad Mini
2. DxtER Chest Sensor
3. DxtER Wrist Sensor
4. DxtER Orb
5. DxtER Blood Pressure Unit
6. DxtER Spirometer

DeepQ Kit
by Dynamical Biomarkers Group

1. Smartphone
2. Scope tests
3. Blood tests
4. Urine test
5. Breath test
6. Glucose test
7. Exam tray
8. Monitoring set
9. Calibration set

QUALCOMM TRICORDER XPRIZE®



ada

The world's first Ai-driven healthcare service.

Safe, convenient and on-demand.

babylon

23andMe

https://youtu.be/xSVdH2JaffA

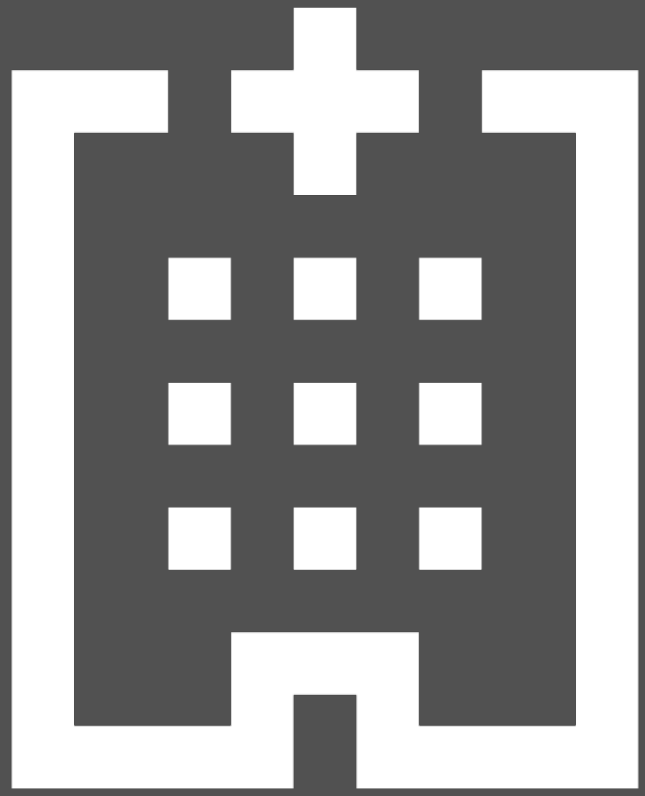
Brave New World

Of Medicine

Goodbye, Flatland!

An introduction to React VR and what it means for web developers

MICHAELA LEHR
Founder, Coil Dankel | Frontend Developer UX Designer



Hacking risk leads to recall of 500,000 pacemakers due to patient death fears

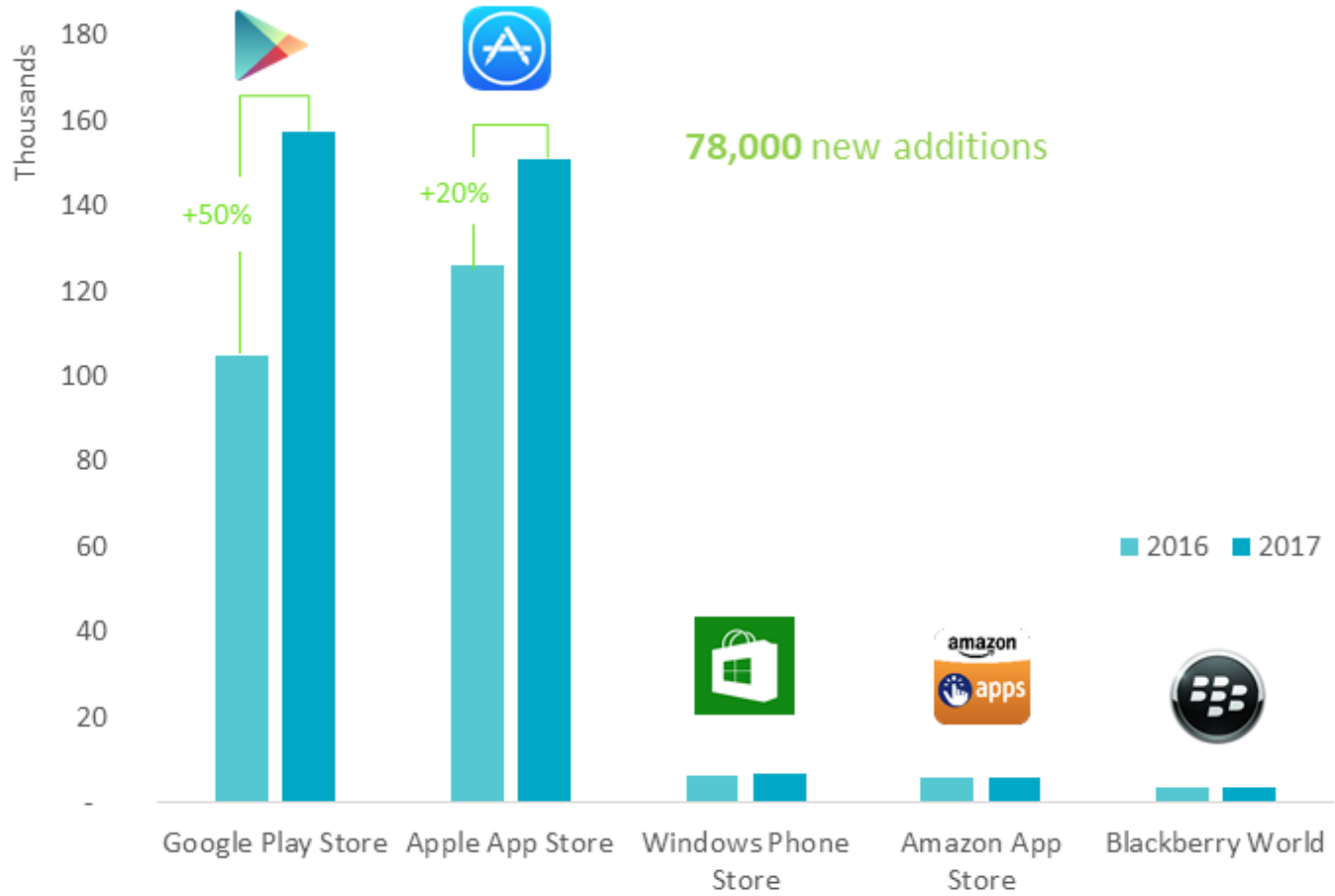
FDA overseeing crucial firmware update in US to patch security holes and prevent hijacking of pacemakers implanted in half a million people

Abbott / St Jude Medical's Accent MRI pacemaker, one of the affected devices that had to be recalled. Photograph: Abbott / St Jude Medical

theguardian

325,000 mHEALTH APPS AVAILABLE – GOOGLE PLAY STORE IS NOW NUMBER ONE FOR HEALTHCARE APPS, OVERTAKING APPLE APP STORE

Number of mHealth apps displayed in App Stores

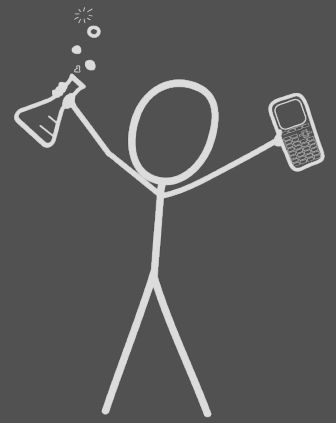


Source: Research2Guidance - mHealth App Developer Economics study 2017 - n = 2,400

©Research2Guidance 2017

NROL-39
NOTHING IS BEYOND OUR REACH

STAND BACK



I'M GOING TO TRY

SCIENCE

xkcd

Cornell University Library

and The Alliance of Science Organisations in Ge

arXiv.org > cs > arXiv:1710.08864

Search or Article ID inside arXiv | All papers | Broaden you

(Help | Advanced search)

Computer Science > Learning

One pixel attack for fooling deep neural networks

Jiawei Su, Danilo Vasconcellos Vargas, Sakurai Kouichi

(Submitted on 24 Oct 2017)

Recent research has revealed that the output of Deep neural networks(DNN) is not continuous and very sensitive to tiny perturbation on the input vectors and accordingly several methods have been proposed for crafting effective perturbation against the networks. In this paper, we propose a novel method for optically calculating extremely small adversarial perturbation (few-pixels attack), based on differential evolution. It requires much less adversarial information and works with a broader classes of DNN models. The results show that 73.8% of the test images can be crafted to adversarial images with modification just on one pixel with 98.7% confidence on average. In addition, it is known that investigating the robustness problem of DNN can bring critical clues for understanding the geometrical features of the DNN decision map in high dimensional input space. The results of conducting few-pixels attack contribute quantitative measurements and analysis to the geometrical understanding from a different perspective compared to previous works.

Subjects: **Learning (cs.LG)**; Computer Vision and Pattern Recognition (cs.CV); Machine Learning (stat.ML)
Cite as: arXiv:1710.08864 **[cs.LG]**
(or **arXiv:1710.08864v1 [cs.LG]** for this version)

Submission history

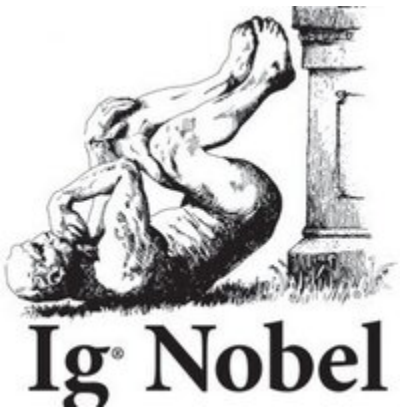
From: Jiawei Su [view email]
[v1] Tue, 24 Oct 2017 16:02:19 GMT (815kb,D)

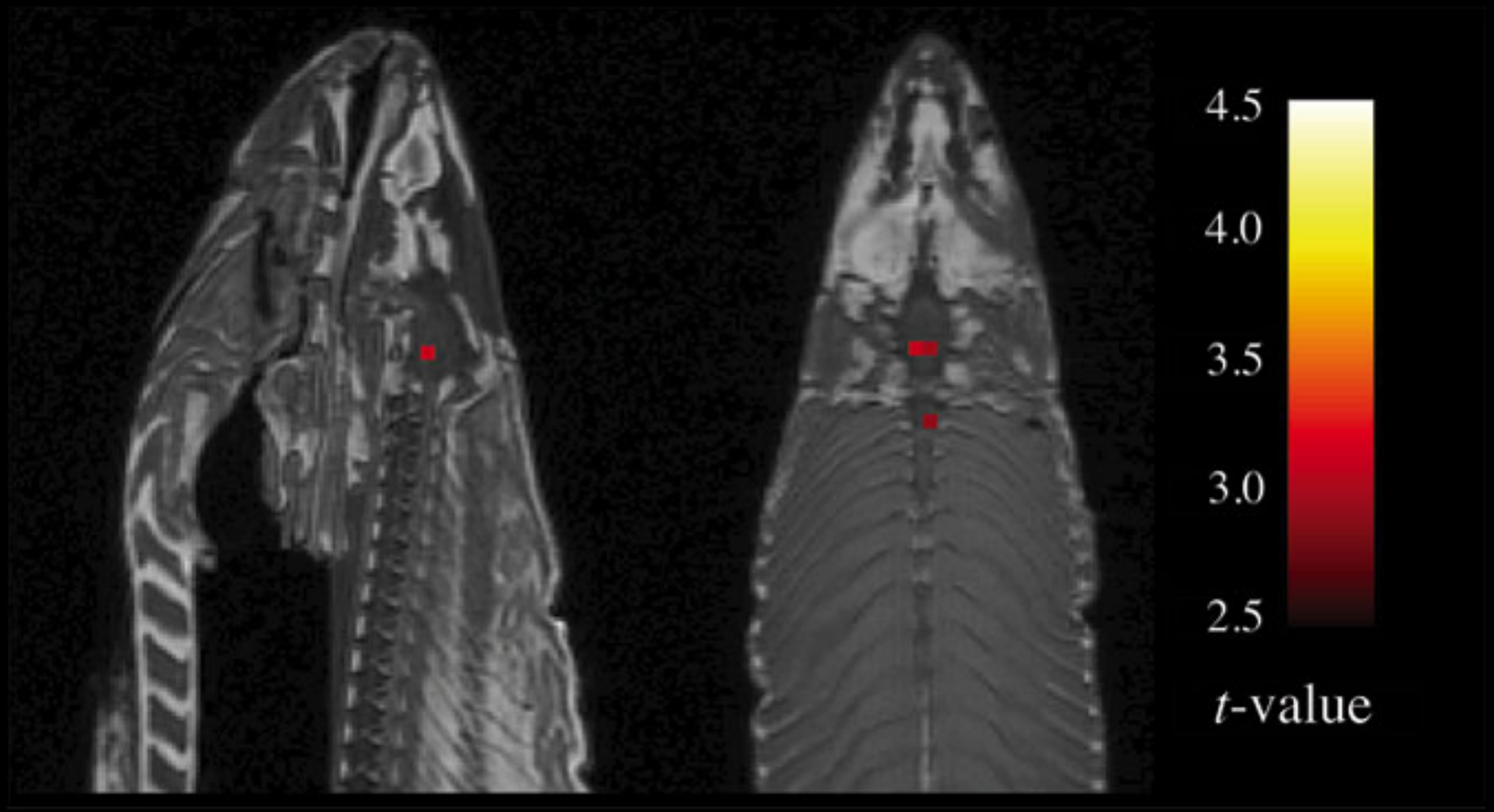
Neural correlates of interspecies perspective taking in the post-mortem Atlantic Salmon: An argument for multiple comparisons correction

Craig M. Bennett[1], Abigail A. Baird[2], Michael B. Miller[1], and George L. Wolford[3]

[1] Psychology Department, University of California Santa Barbara, Santa Barbara, CA; [2] Department of Psychology, Vassar College, Poughkeepsie, NY;

[3] Department of Psychological & Brain Sciences, Dartmouth College, Hanover, NH



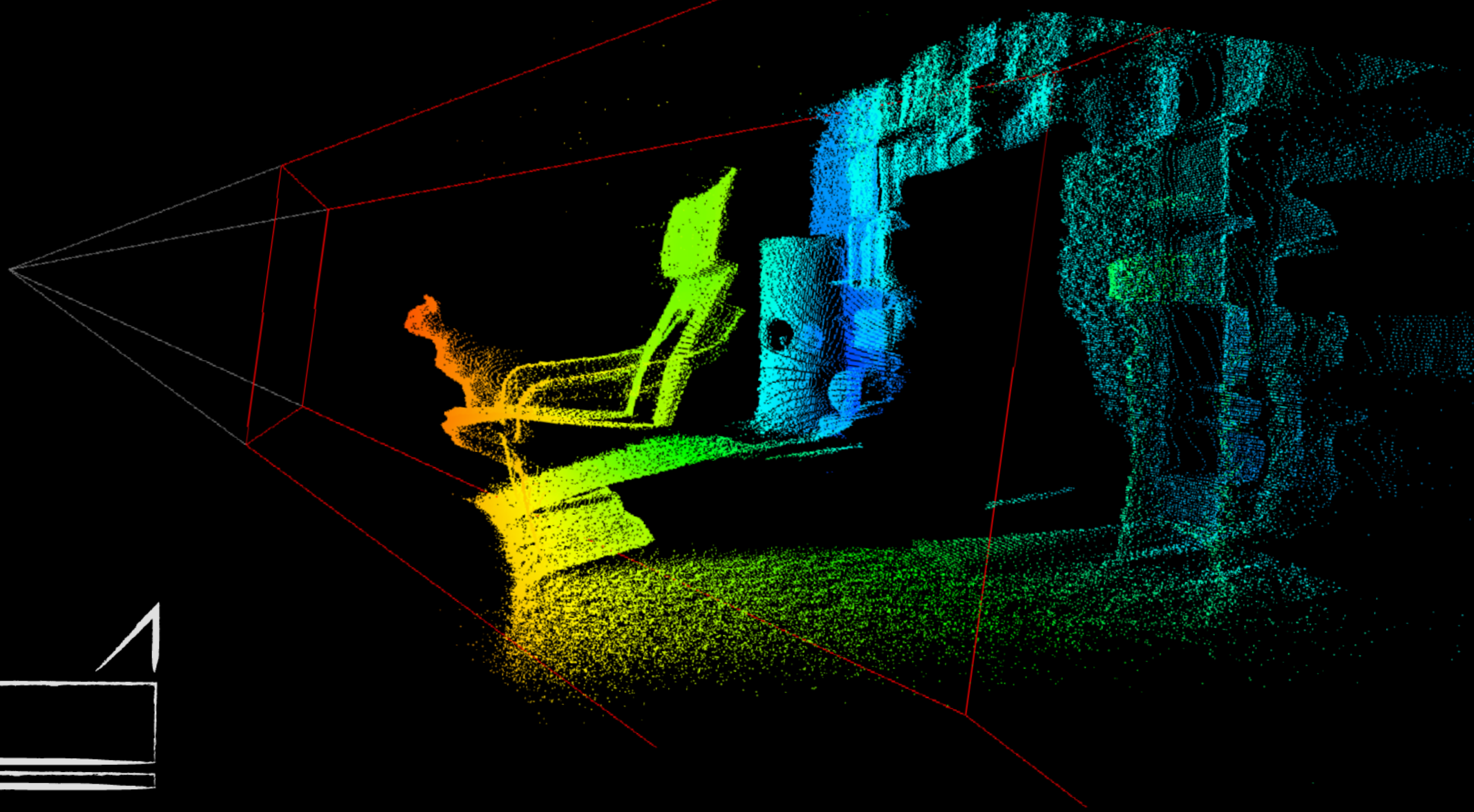

4.5
4.0
3.5
3.0
2.5
t-value

We Do What We Must Because We Can

APERTURE LABORATORIES

“**Data is the new oil.** It’s valuable, but if unrefined it cannot really be used. It has to be changed into gas, plastic, chemicals, etc to create a valuable entity that drives profitable activity; so must data be broken down, analyzed for it to have value.”

Clive Humby (2006)



Karen.otte@motognosis.com
https://www.researchgate.net/profile/Karen_Otte

Questions?

APERTURE LABORATORIES

Quellen!

The future of medicine – Revolution is Loading…

- New generation of people
- Views change
- More people are willing to pay

- The system is huge and behebig