



**Next Genius  
Webinars**

Careers of the Future

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# NEUROSCIENCE

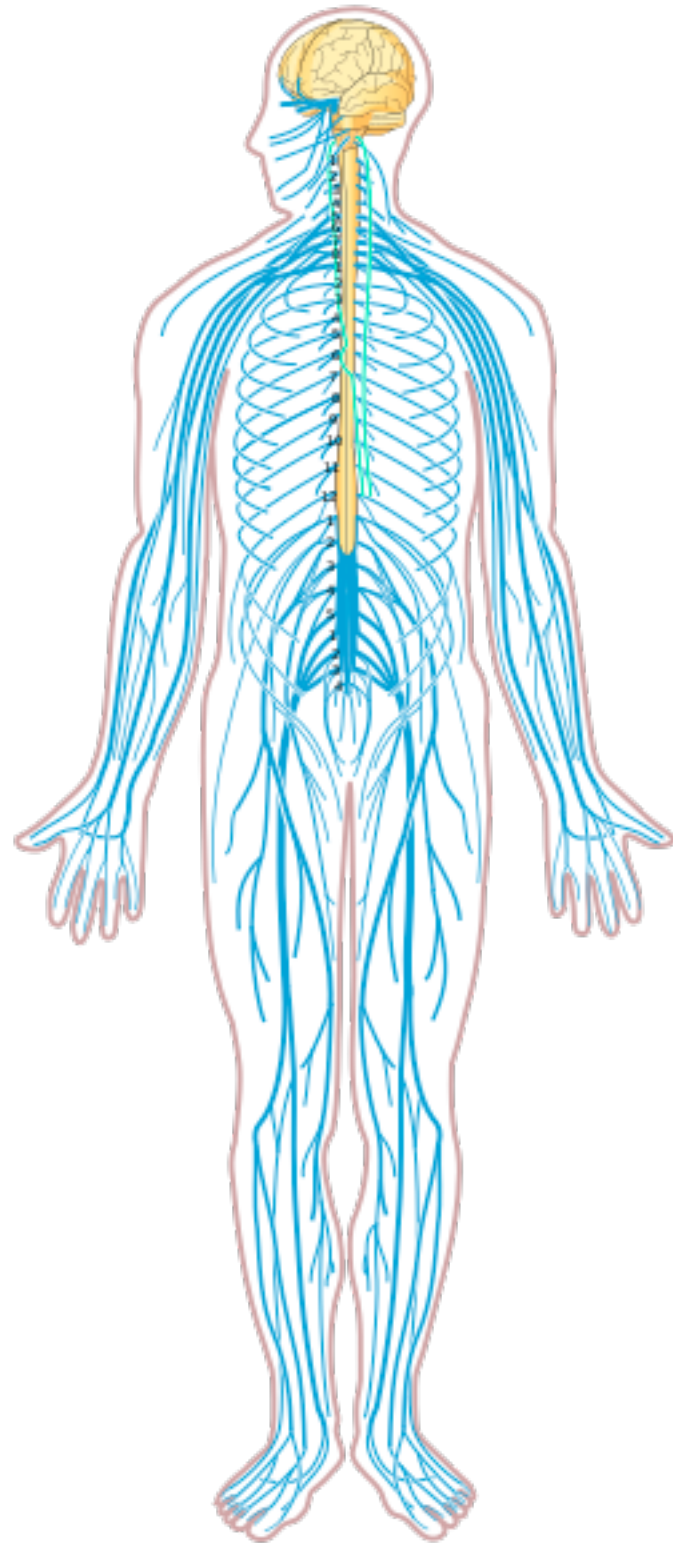


**Sushrut Thorat**



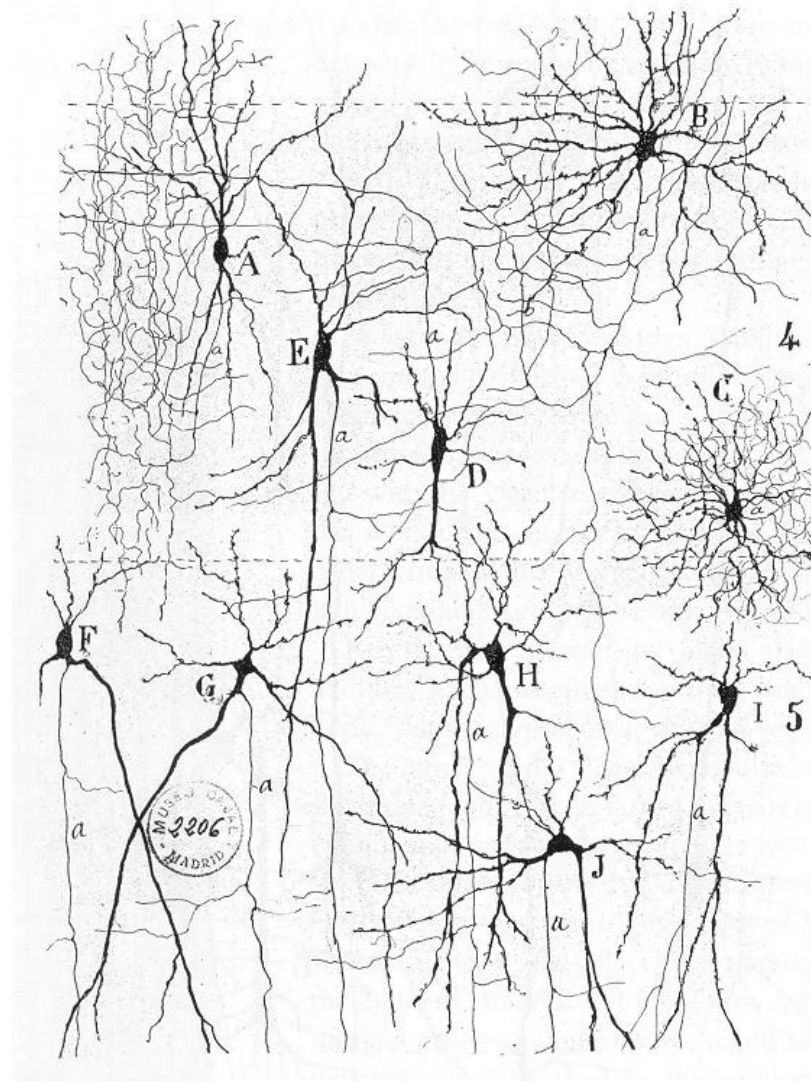
# What is Neuroscience?

A nervous system

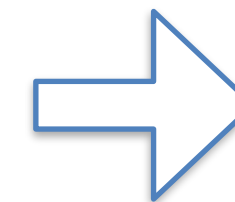
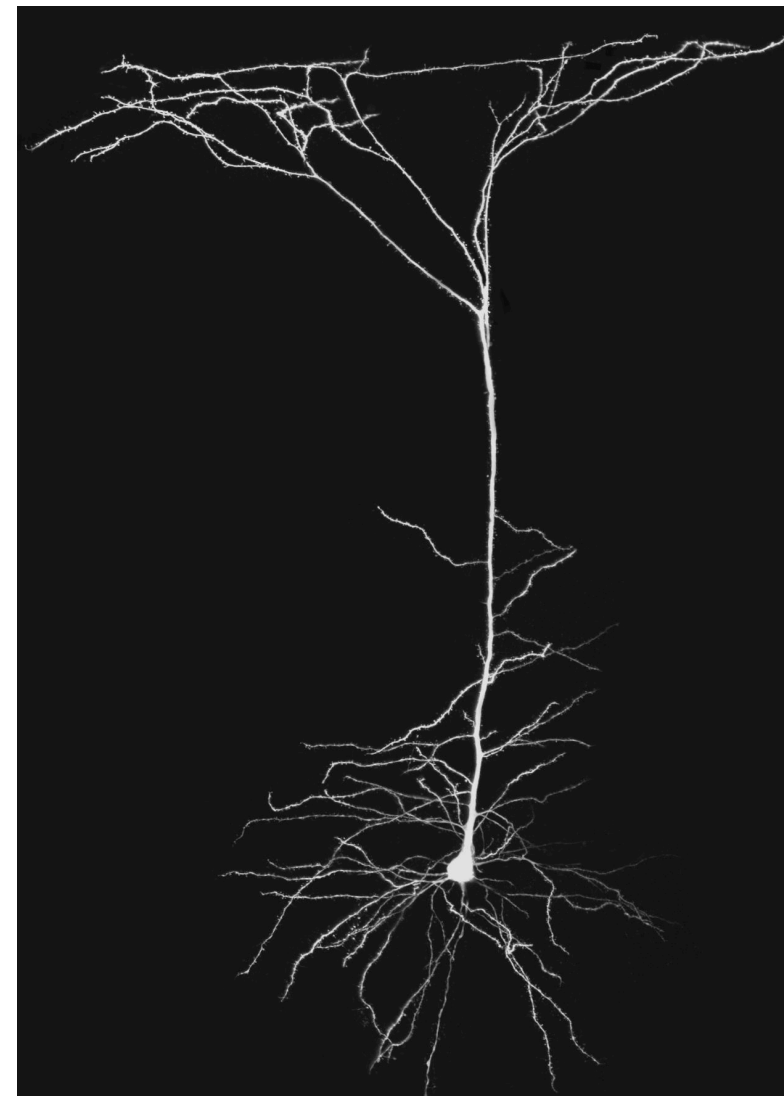


*The study of neural networks: how neurons work, how signals are propagated, characterising connectivity, and how it all drives behaviour.*

A neural micro-circuit



A neuron



## Phenomena

- Consciousness
- Attention
- Memory

## Behavior



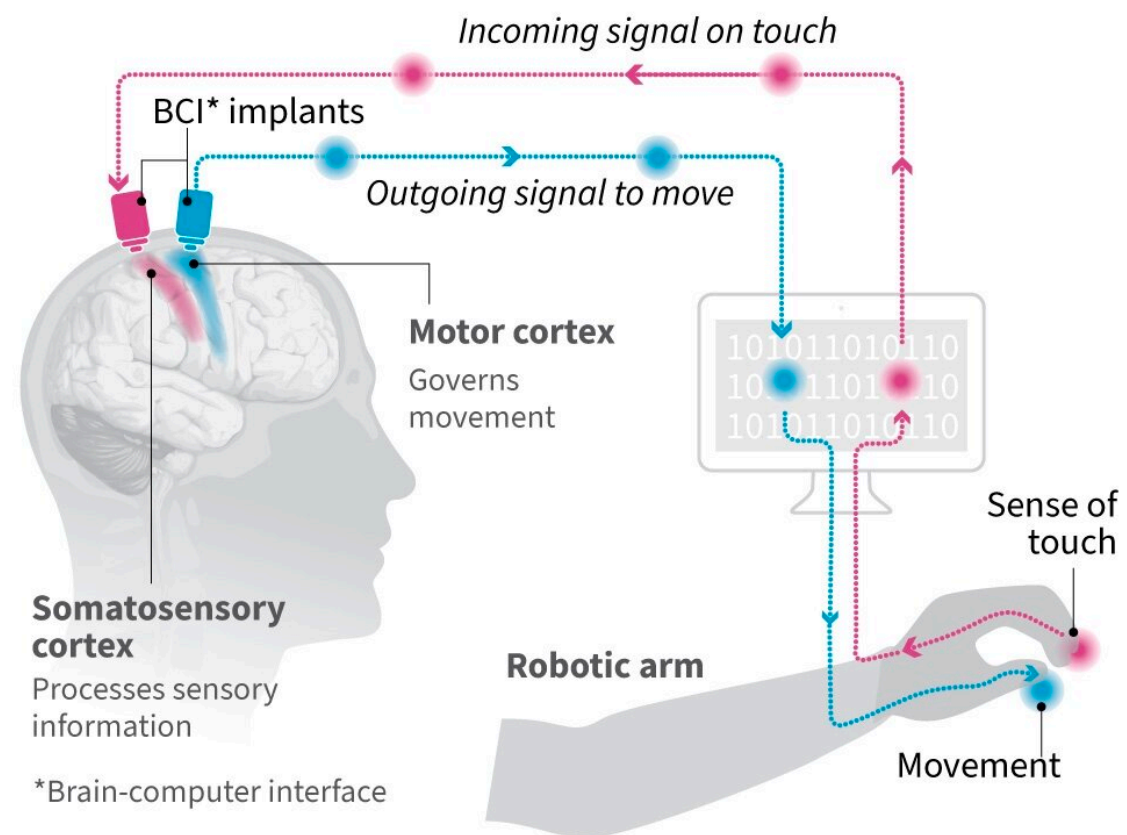
information processing and passing

# Notable applications

## Mind-controlled prosthetic limbs

### Robotic arm with feedback

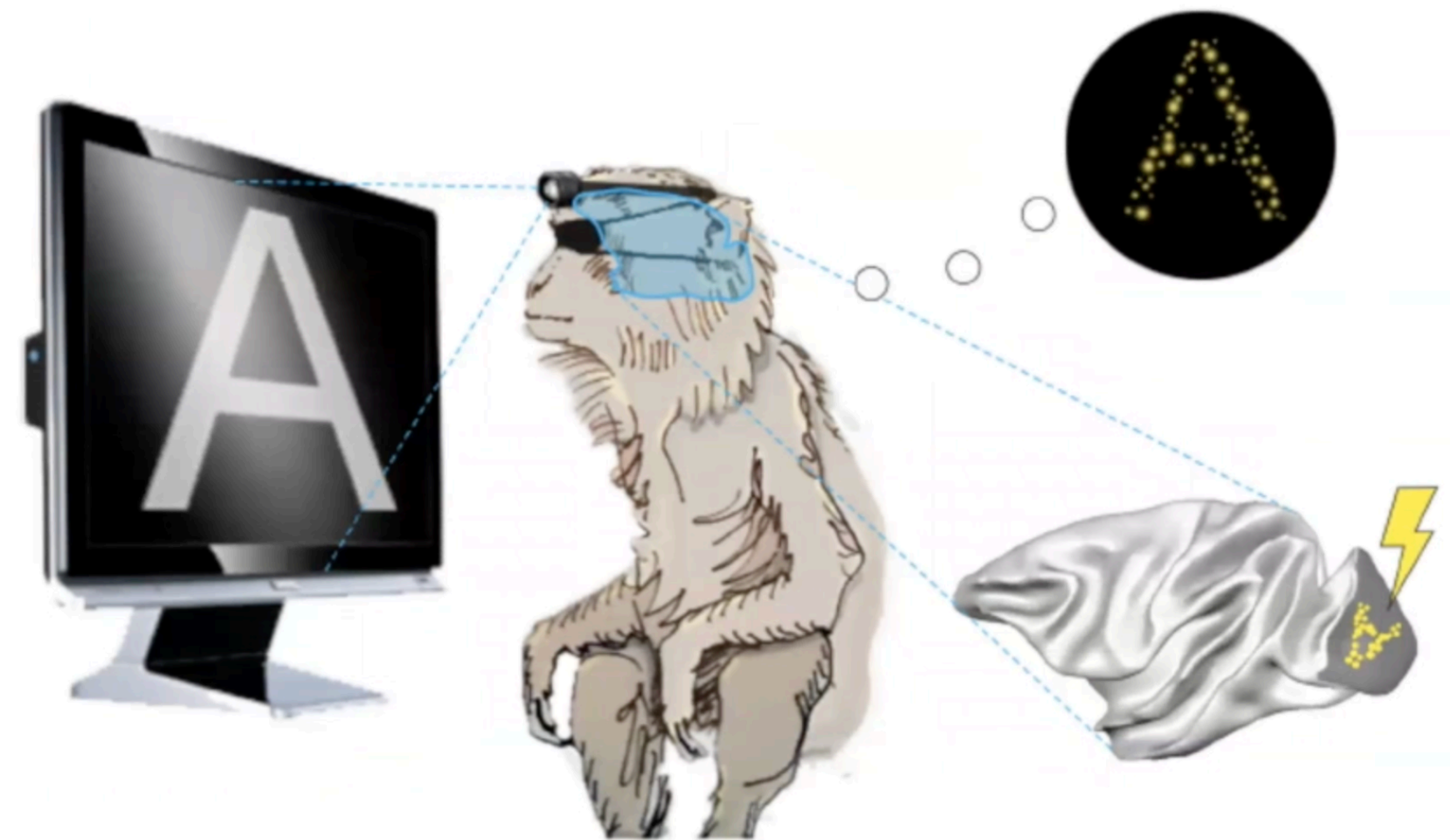
Two-way system improves performance for thought-controlled prosthetic



Source: AAAS - Brain-computer interface with artificial tactile feedback improves robotic arm control



## Restoring vision in the blind

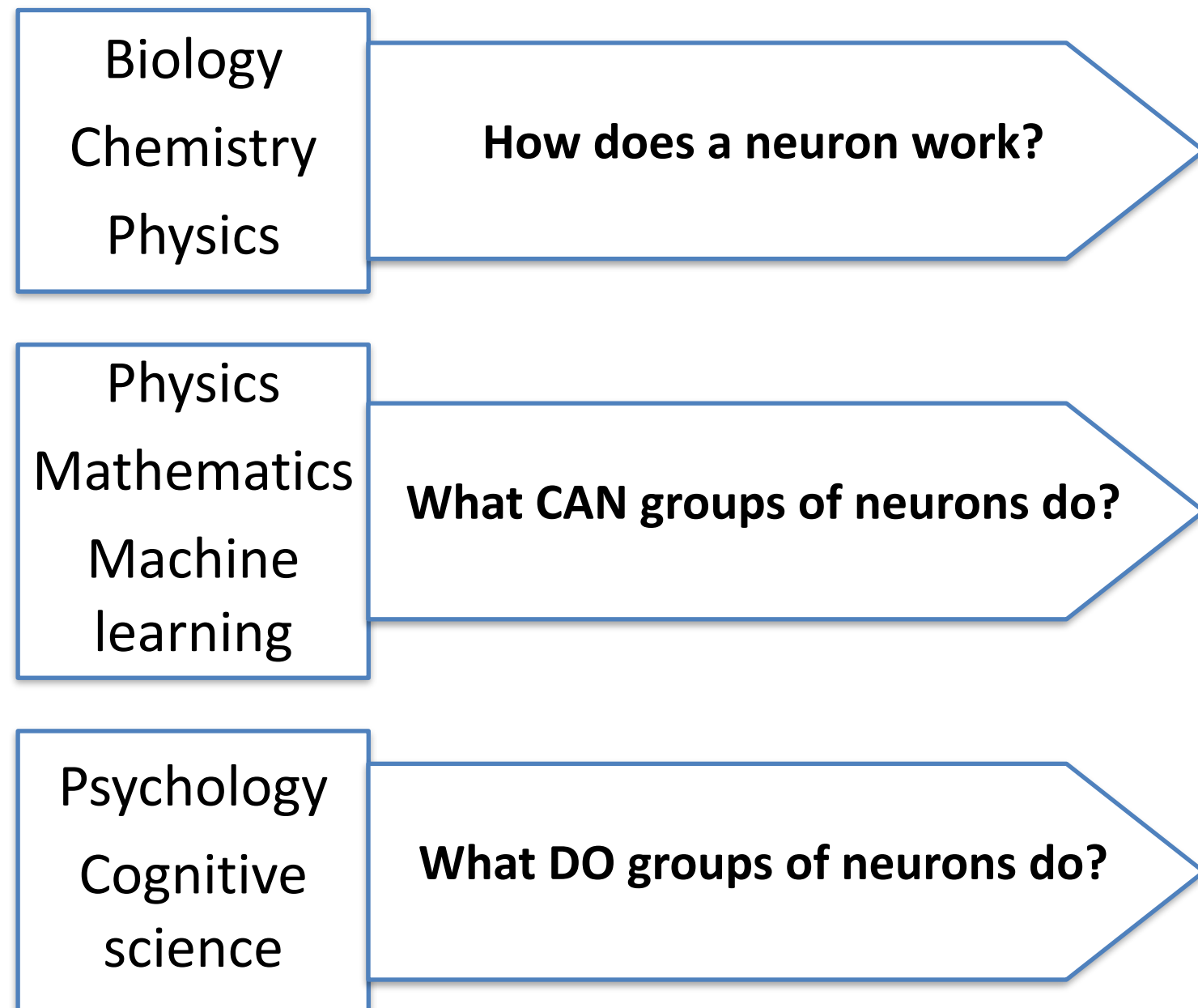


<https://nin.nl/restoration-of-vision/>





# What kind of skills are required to do well in this field?



Recipe for success:

A background in quant-heavy fields coupled with a DEEP interest in biological neural circuits.





# Job Opportunities & Scope of Growth

Professorship

Research  
scientist

Data scientist

The field is at a crossroads  
and there's A LOT to be done!

In India:

NCBS@IISc, IIT Gandhinagar,  
NBRC-Gurgaon, TIFR

All these positions  
are well-paid too!  
Think 20 lpa+

ML  
Neuroscience  
BCI





# Closing comments & Q/A

1. A lot of sci-fi stuff such as mind-controlled machines will become a reality in this century; time to get it in to be a part of the action!
2. Use your privilege to your advantage: focus on what interests you in terms of building things, rather than resigning yourself to making quick money.

BTW this is my trajectory:

Physics (B.Tech. IIT-Bombay) ->

Cognitive Neuroscience (MS UTrento & Ph.D. Donders Institute) ->

Machine learning (Postdoctoral research at UOsnabruck)

