



# Computational Neuroscience

---

Kumaresh Krishnan

# YOURS FOR THE TAKING

---

Why listen to a sermon on CNS?

Where we've come and where we're headed

"Back to biology" friends!

Am I doing something worth talking about

'Round the globe – worthy mentions

A pinch of motivation ... Perhaps?

# AND THE STORY BEGINS

...

Buzzwords!

Solid backing?

Do we even  
know enough?

Models and  
their  
implications

Some irony  
for you 😊

Delve a little  
deeper ...



# ADVANCES IN CNS

Measurements:  
Where does  
data come  
from?

Voltage clamp

Hodgkin  
Huxley

Recording  
techniques

Neuron  
activity

Wait a sec . . .  
***Activity?***

Potentials

Channels

Pumps and diffusion

Gradients

Action potential

Revisit Hodgkin Huxley

# A PAGE FROM THE BIO-BAG



# THESIS TIME

---

- Olfaction and the piriform cortex
- Data – nature, quantity, quality
- Identifying patterns – enter ML
- Approaches in literature
- Why is stuff this hard!
- So what ... ?



# CHAT TIME!

---

Suspensions  
about ML

Decoding vs  
Encoding

Extensions  
from thesis

# CNS WORLD – AT YOUR DOORSTEP

---



- Sensory systems
- Learning & Memory
- Neurobiology of time!



# CHAT TIME AGAIN!

---



# THAT'S ALL FOLKS

---

