

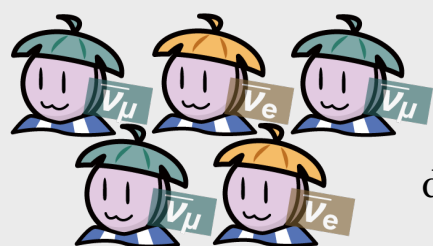


# Experimental Neutrino Physics Group @ SLAC Lab



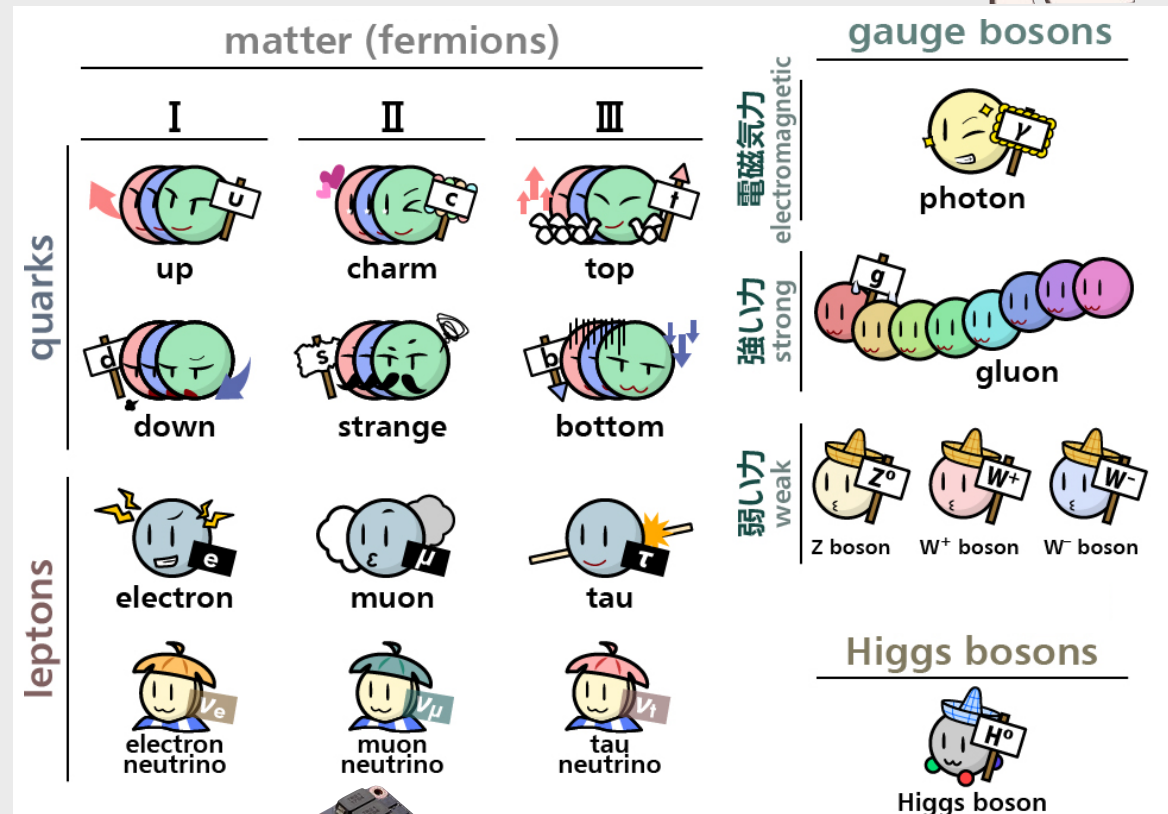
## What is neutrino? Why we study?

- **Neutrinos** are the **least known elementary particles** in the Standard Model (SM) of particles, and they might be the keys to explain the matter-dominated universe we live in today!
- They exhibit **non-SM physics phenomenon** called “**neutrino oscillation**.” We build high precision experiments to observe this and study more about neutrinos!



### What is “oscillation”?

While neutrinos are produced in a definite flavor, **they can transform into a different flavor** as they travel through spacetime!



## Machine Learning (ML) for Analyzing Particle Images

- We use liquid argon time projection chambers (LArTPCs) to record **high precision image** of neutrino interactions!
- We lead the field for ML techniques R&D (in particular **deep neural networks**) for data analysis
- **\*\*Join us\*\*** for an **opportunity for cutting-edge physics research w/ ML!**

[deeplearnphysics.org](http://deeplearnphysics.org)

email @ [contact-at-deeplearnphysics-dot-org](mailto:contact-at-deeplearnphysics-dot-org)



ML+GPU  
for hunting  
neutrinos!



Nu: 0.926

Deep neural networks identifying  
neutrino interaction in LArTPC image