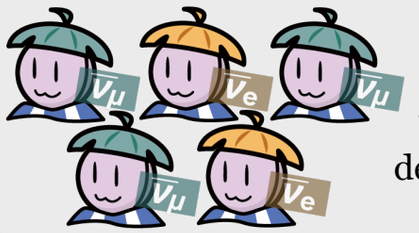
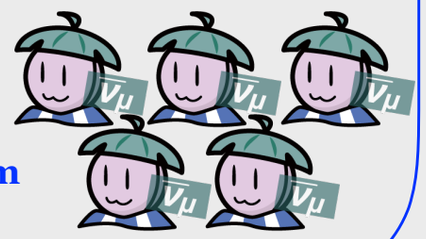
# Experimental Neutrino Physics Group @ SLAC Lab

## What is neutrino? Why we study?

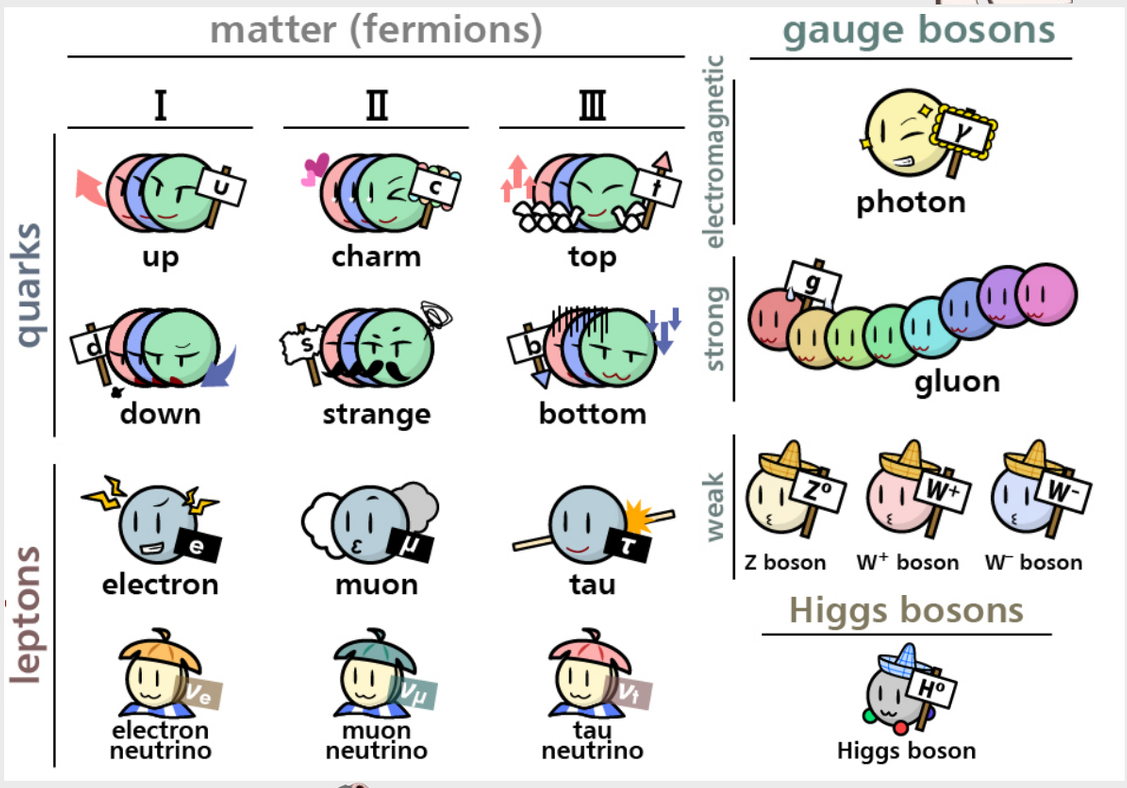
- **Neutrinos** are the **least known elementary particles** in the Standard Model (SM) of particles, and they might be the keys to explain the matter-dominated universe we live in today!
- They exhibits **non-SM physics phenomenon** called **"neutrino oscillation."** We build high precision experiments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

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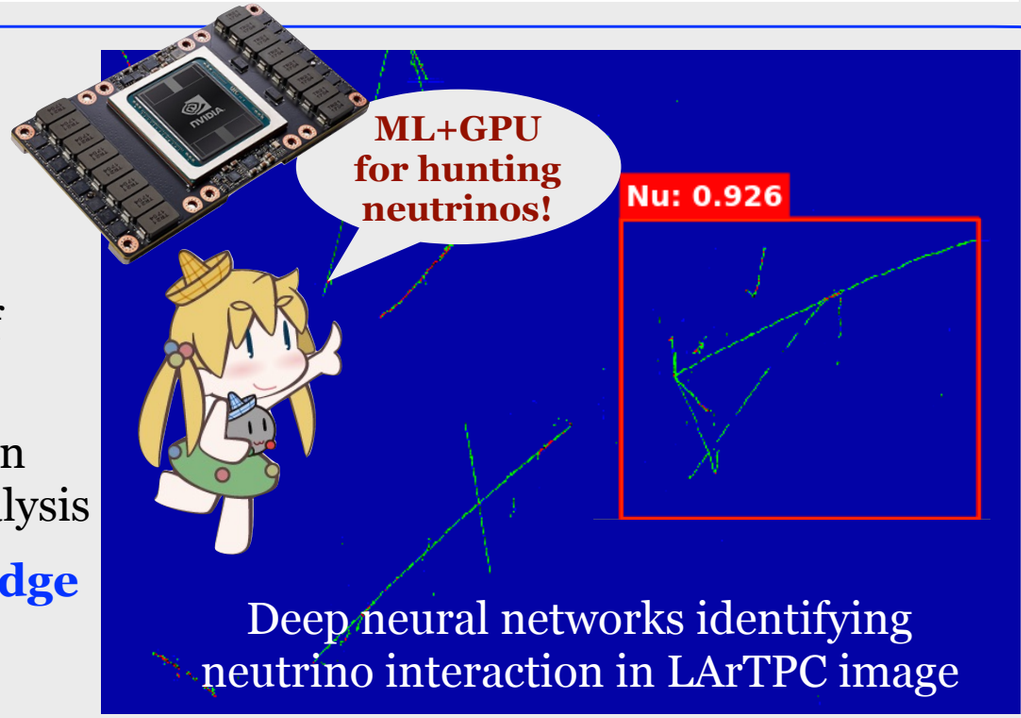


Deep neural networks identifying neutrino interaction in LArTPC image

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