



```
import pennylane as qml
from pennylane import numpy as np

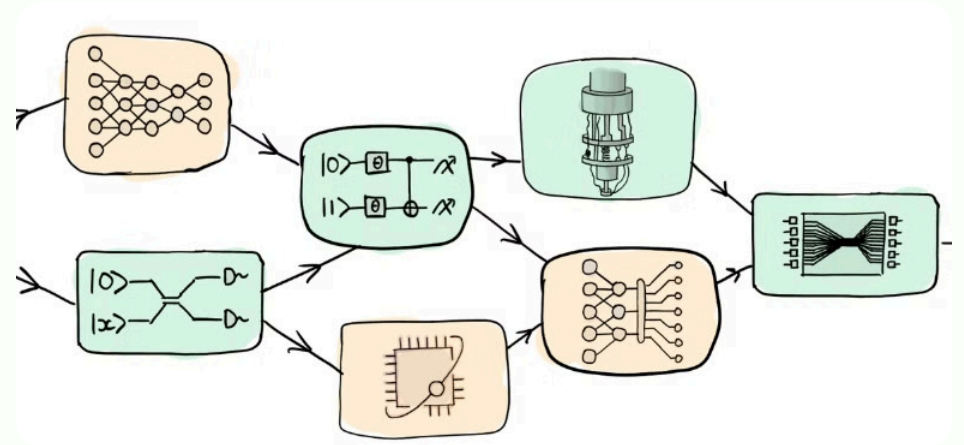
# create a quantum device
dev1 = qml.device("default.qubit", wires=1)

@qml.qnode(dev1)
def circuit(phi1, phi2):
    # a quantum node
    qml.RX(phi1, wires=0)
    qml.RY(phi2, wires=0)
    return qml.expval(qml.PauliZ(0))

def cost(x, y):
    # classical processing
    return np.sin(np.abs(circuit(x, y))) - 1

# calculate the gradient
dcost = qml.grad(cost, argnum=[0, 1])
```

# Welcome to the Quantum Computing Club!



# Our Vision



## Thriving Community

Foster a community of quantum computing enthusiasts.



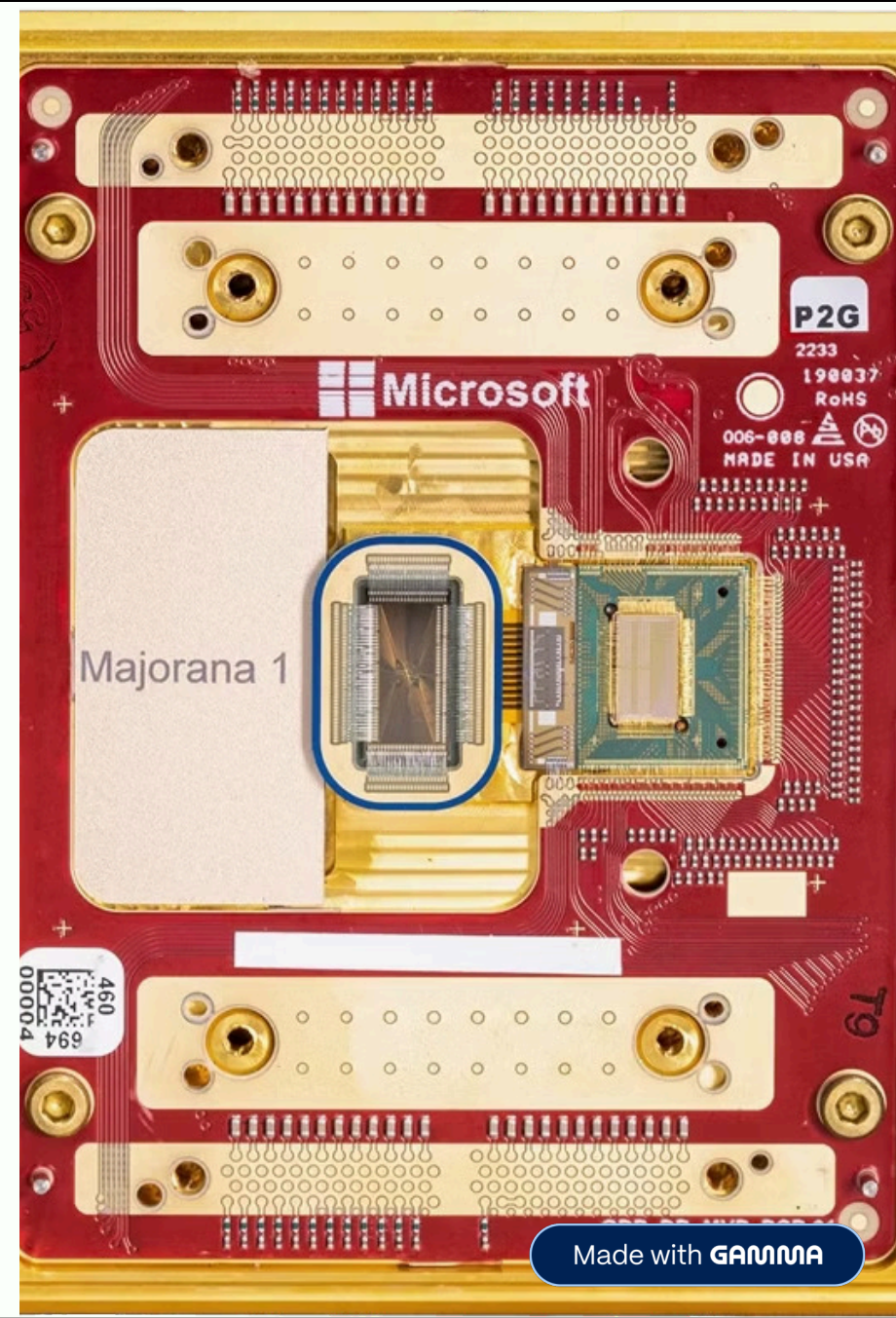
## Learning Hub

Become a hub for learning, research, and collaboration.



## Advance Computing

Contribute to the advancement of quantum computing.



# Club Objectives

## Strong Foundation

- Quantum mechanics
- Quantum computing

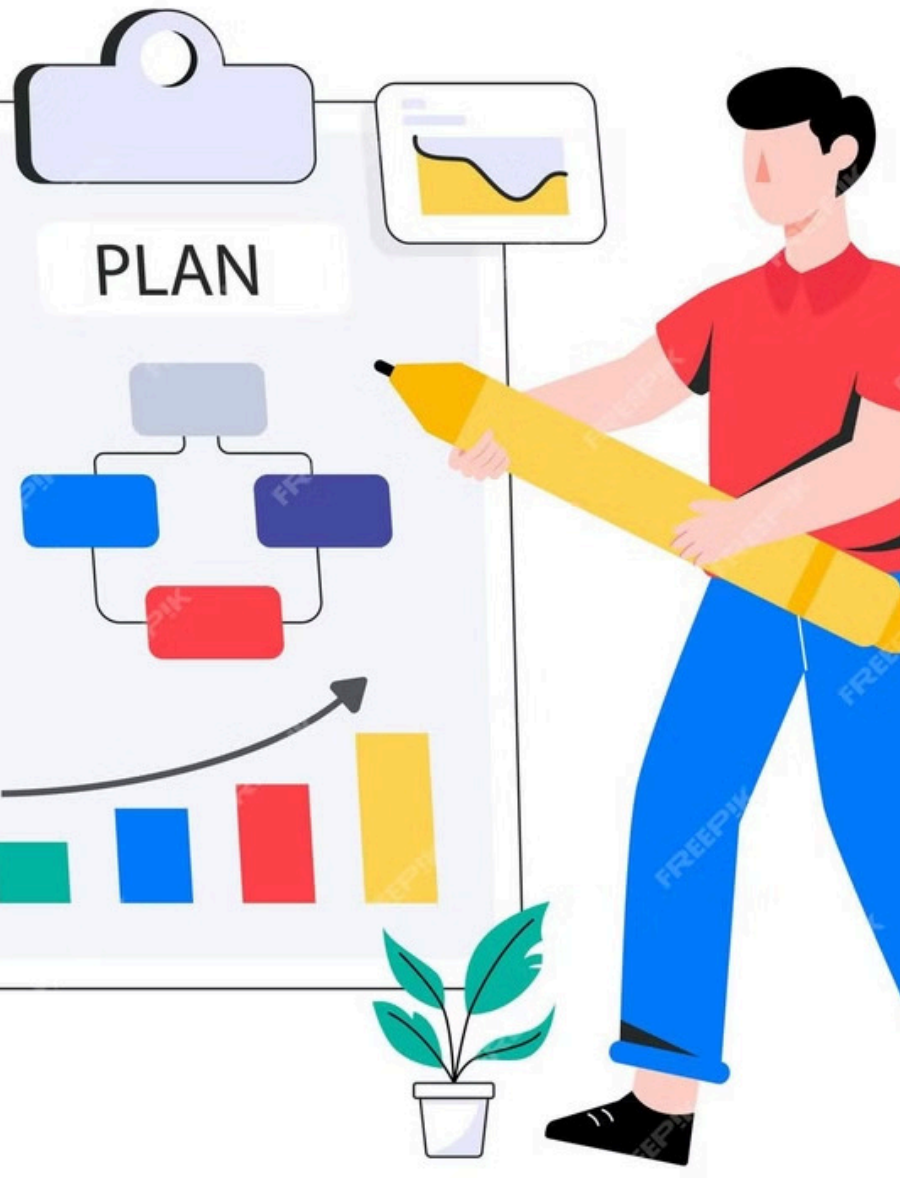
## Hands-On Experience

- Qiskit
- PennyLane

## Awareness

- Workshops
- Seminars

# Club members



# Planned Activities: Semester

1

## **Introductory Workshops**

Fundamentals, linear algebra, Qiskit/PennyLane

2

## **Coding Challenges**

Quantum algorithms implementation

3

## **Journal Club**

Paper's presentations

4

## **Guest Speaker**

To confirm...

# Quantum Computing in Practice with Qiskit® and IBM Quantum Experience®

Practical recipes for quantum computer coding at the gate and algorithm level with Python



## Resources and Support

### Textbooks

Online courses and research papers.

### GitHub Repository

Code examples, tutorials, and project templates.

### Mentorship Program

Experienced members with newcomers.



# Why you should join us?

## **Expand Knowledge**

Cutting-edge field.

1

2

## **Network**

With leaders in the field.

4

3

## **Career Prospects**

Research opportunities

## **Hands-On**

Programming sessions

# How to Get Involved



**Join our  
meetings**



**Propose ideas**

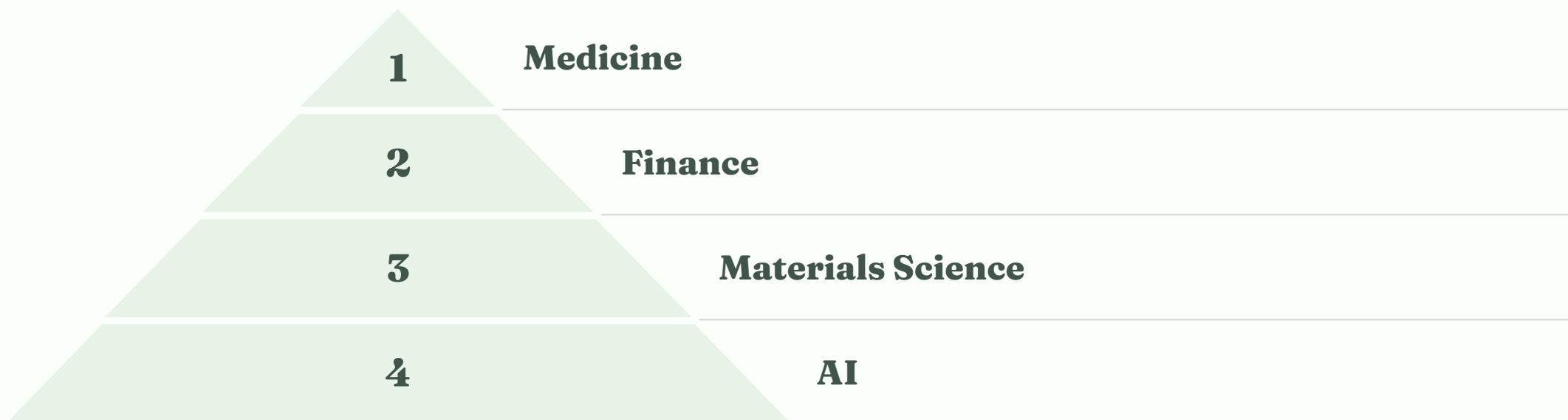


**Social Media**





# Quantum Computing: The Future is Now



Quantum computing applications in various fields.

# Quantum Computing in Practice with Qiskit® and IBM Quantum Experience®

Practical recipes for quantum computer coding at  
the gate and algorithm level with Python



## Next meeting!!

### **Fundamentals on Quantum Computing**

What is a qubit?!!

### **Coding challenge!**

Implement your own  
quantum circuit in Python

# Thank you!