

# Quantum Blockchain for an NFT-based ticketing system

1RV23CY051 Shrish Vasudevrao Deshpande 1RV23CY049 Sarthak Lakhotia 1RV23EE012 Arnav Saxena 1RV23IM048 Shri Rang Pai

**Theme: Quantum Mechanics** 

Group 27, Cogito Ergo Sum

#### **Proposition**

Introducing Quantum Blockchain for NFT-based Ticketing System, a solution leveraging quantum computing and blockchain technology to revolutionize the ticketing industry. By harnessing the power of quantum algorithms and decentralized ledger systems, we can offer unparalleled security, transparency, and efficiency to both event organizers and attendees. Ticket scalping and high commissions can be eliminated, helping out both the fans and artists.

## **SWOT Analysis**

- 1. Strengths Enhanced security, increased transparency, reduced costs and increased revenue to artists.
- Weaknesses Reliance on quantum technology, which is not as accessible, potentially increased energy consumption.
- 3. Opportunities Novel idea, collaboration opportunities between quantum computing and blockchain industries, potential for standardisation.
- 4. Threats Competition from tradinitional ticketing system, 51% blockchain attacks, regulatory challenges.

### **Objectives**

- 1. Develop and Implement Quantum Algorithms for blockchain operations within the ticketing system.
- 2. Establish a Decentralized Ticketing Network using blockchain technology.
- 3. Ensure Direct Revenue for Artists by removing the middlemen in ticket sales.
- 4. Design a system which remains operational during high demand, guaranteeing a seamless ticket purchasing experience.

#### **Tools**

- 1. Utilize quantum computing frameworks such as Qiskit for developing and testing quantum algorithms.
- 2.NFTs and Blockchain technology will be used for tickets and the ticketing system respectively.

#### **Outcomes**

- 1. Implement smart contracts to automate revenue distribution from ticket sales directly to artists, reducing reliance on intermediaries.
- 2. Enhance transparency in ticket sales and revenue distribution, and eliminate scalping practices and unfair pricing mechanisms.

## Methodology

Design a Quantum algorithm for Blockchain Design a blockchain that uses **Quantum algorithms Implement NFTs and smart** contracts on our blockchain network Design and deploy smart contracts for a ticketing system Create a frontend from which users can easily purchase tickets



## **Future Development**

- 1. Expand to other industries, such as movie theatres, entertainment, transportation and other event management.
- 2. Drive innovation and efficiency in the ticketing process by enhancing the user experience and improving security.

#### Conclusion

The confluence of quantum computing and NFTs can revolutionize ticketing systems. We can create ticketing systems that are more secure, efficient, user friendly. Artists can be paid the money they deserve, cutting out the middlemen and reducing exorbitant commissions. We can continuously evolve to meet the ever changing needs of the industry.