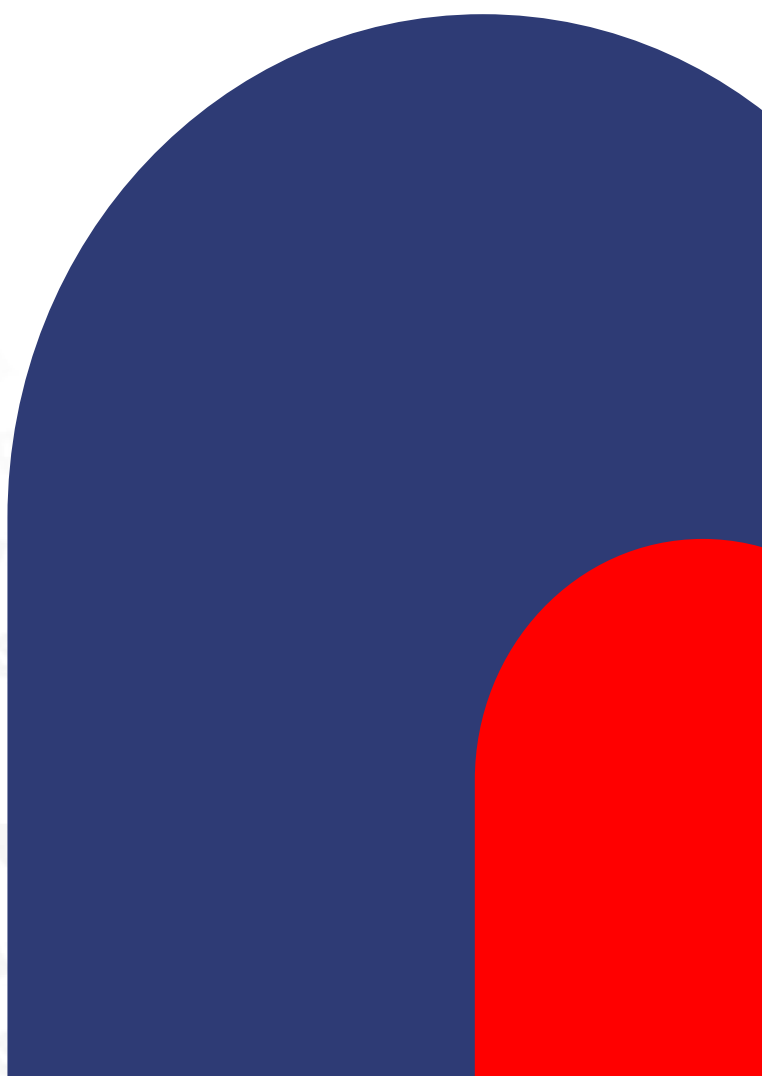**SORBONNE**
**UNIVERSITY**
**ABU DHABI**

# Workshop:

## Empowering Educators: Quantum Technology and AI in the Classroom

Tuesday 29 April 2025

8:30 am – 5:00 pm

SUAD Campus

## Abstract:

This engaging one-day workshop is designed to equip school teachers with the knowledge and tools needed to navigate the rapidly evolving fields of Artificial Intelligence (AI) and Quantum Technology. Combining thought-provoking presentations and hands-on activities, the workshop will address the challenges educators face due to the emergence of new AI tools and provide insights into the foundational role of mathematics in AI and physics in quantum technology.

Join us for this informative and collaborative workshop to explore the exciting intersection of AI and quantum technology, empowering you to inspire the next generation of learners!

## Programme :

**9:30 am Registration and Welcome Coffee**

**9:00 am - 10:45 am : Keynote Presentations**

**An insight to Quantum Computers and Cryptography: Presented by Dr. Stavros Christopoulos and Dr. Sudarshan Shinde**

The presentation begins with a historical review of computing devices and subsequently describes in layman terms the main components of a conventional computer and drives a comparison with those of a quantum computer. As a focused application, classical and contemporary cryptography protocols, such as Ceaser cipher and RSA, are presented and are compared to an implementation of a cryptographic process utilizing the principles of quantum mechanics.

**10:45 am - 11:15 am : Coffee Break & Networking**

**11:15 am - 12:15 am: How do machines talk? A tour of Large Language Models -Presented by Dr. Samuel Feng**

This talk explores the evolution of large language models, from simple n-grams to advanced architectures, through interactive demonstrations. We'll highlight the key ideas behind these models and how they have become increasingly powerful over time, making complex AI systems more effective and accessible. In doing so, we will touch upon many misunderstandings related to training/serving, current developments, and security issues related to AI tools.

**12:15 pm – 1:30 pm : Lunch Break**

**Group Photo** – Capture the moment!

**1:30 pm – 3:00 pm: Quantum Physics and Technologies for Young Minds- Presented by Dr. Eliane Bsaibess and Dr. Joumana El Rifai**

Quantum technologies are revolutionizing the world, and their core concepts can be understood and appreciated by students of various ages in different subjects. This approach makes quantum ideas accessible to non-scientific disciplines, inspiring creativity, critical thinking, and interdisciplinary connections. By relating quantum principles to everyday life, technology, and global issues, students can see the relevance of these innovations across various fields. Explore methods and activities for

introducing basic quantum physics concepts and their related technologies to both younger students and high school students. Discuss ways to make quantum ideas and technologies engaging, such as using analogies, simple experiments, interactive simulations, and real-world applications like quantum computing, quantum cryptography, and quantum sensors. The presentation will include live demonstrations and applications to illustrate these concepts effectively, ensuring participants leave with practical strategies to inspire curiosity and understanding in their students.

**3:00 pm - 3:15 pm : Coffee Break**

**3:15 pm - 4:15 pm : Exploring the Interconnections Between Data Science and AI-Presented by Dr. Giulia Demasi**

 AI and Data Science are interconnected fields that complement each other.
Data Science plays a crucial role in the AI development process: In fact, AI systems rely on high-quality data to function effectively. Data Science can guarantee data quality using exploratory data analysis, visualization and data modeling, to extract meaningful insights from data. AI utilizes these insights to learn, adapt, and make intelligent decisions. Both based on Mathematics and Statistics, Data science and AI jointly drive innovation in multiple industries, from engineering to finance, making AI-powered solutions more accurate and data-driven.

**4:15 pm – 5:00 pm: External Speakers: AI Professionals**

- ➢ Experts will showcase real-world applications of AI in education.
- ➢ Open Q&A session for attendees to engage with professionals.

**Closing Remarks**

**Distribution of Goodies** – Exclusive event souvenirs.

**Optional Lab Visit** – Hands-on experience with quantum technology