

# Jose Rizal University College of Computer Studies Engineering Computer Engineering Department

### W10 - Webinar Report

**CPE C409 – SEMINARS AND FIELDTRIPS** 

#### **Submitted by:**

Exiquiel John A. Pines

**Submitted to:** 

Mrs. Monette Loy-A

**Date Submitted:** 

October 9, 2023

Hosting Institution: Institute of Computer Engineers of the Philippines (ICpEP)

Seminar Title: Quantum Computing for Computer Engineers

Speaker: Engr. Dylan Josh D. Lopez

Seminar Date and Time: September 15, 2023 / 9:35 PM

Seminar Venue: Webinar via Zoom

On September 15, 2023, I attended the 3rd International Convention and 11th National Convention of the Institute of Computer Engineers of the Philippines. One of the talks was titled "Quantum Computing for Computer Engineers". The talk was led by Engr. Dylan Josh D. Lopez,

the Chief Innovation Officer of Borq Technologies Inc.

Over the years, the field of computer engineering has made incredible strides, continuously developing to meet the ever-increasing demands of society. Technology has advanced steadily since the early days of manual computation until the invention of modern computers. But with the advent of quantum computing, the computing landscape is about to undergo a revolutionary change. In this essay, we examine the profound effects that quantum computing will have on

computer engineers and the wider technological environment.

When compared to conventional computers, quantum computers operate according to a completely different set of principles. Instead of conventional bits, they use quantum bits, or qubits, which exhibit the remarkable property of simultaneously existing in both 0 and 1 states as well as in any combination of those states. This distinctive property distinguishes quantum computers from their classical counterparts by enabling them to carry out complex calculations at

an astounding rate.

The notion of the "quantum advantage," which refers to the capacity of quantum computers to solve specific computational problems exponentially faster than current classical techniques, is one of the most important developments in the field of quantum computing. This advantage has a vast and diverse range of potential applications and the power to completely transform entire industries.

Computer engineers now have the chance to switch from conventional computer engineering to quantum technology engineering as quantum computing advances quickly. This transition demands a thorough grasp of quantum physics concepts as well as the capacity to design and use quantum algorithms. Numerous educational resources and training courses are being developed to support this developing field, giving computer engineers the fundamental knowledge and abilities necessary for success in the field of quantum computer engineering.

The IBM Quantum Composer is one such tool that helps computer engineers investigate the world of quantum computing. Engineers of various skill levels can design and test quantum circuits thanks to this user-friendly graphical interface. For computer engineers, it is a useful tool for gaining hands-on experience in creating quantum circuits and maximizing the power of quantum computers.

In conclusion, quantum computing is an innovative force that has the potential to transform many industries and the field of computer engineering. Its capacity to solve challenging issues at previously unheard-of speeds, as exemplified by the idea of the "quantum advantage," opens up new vistas of potential. To stay at the forefront of technological innovation and scientific discovery, computer engineers must embrace the transformative potential of quantum computing as we move forward. Unquestionably, quantum computing is the way of the future, and integrating it into computer experts' skill sets is crucial to staying ahead of the curve. For computer engineers

all over the world, quantum computing is a beacon of opportunity and change in this era of rapid technological advancement.



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### W10 - Webinar Evaluation

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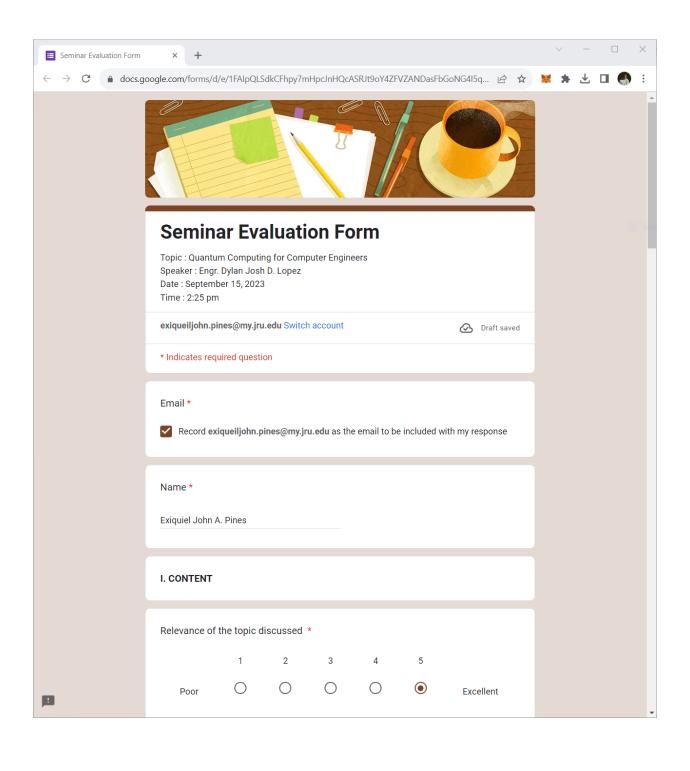
Exiquiel John A. Pines

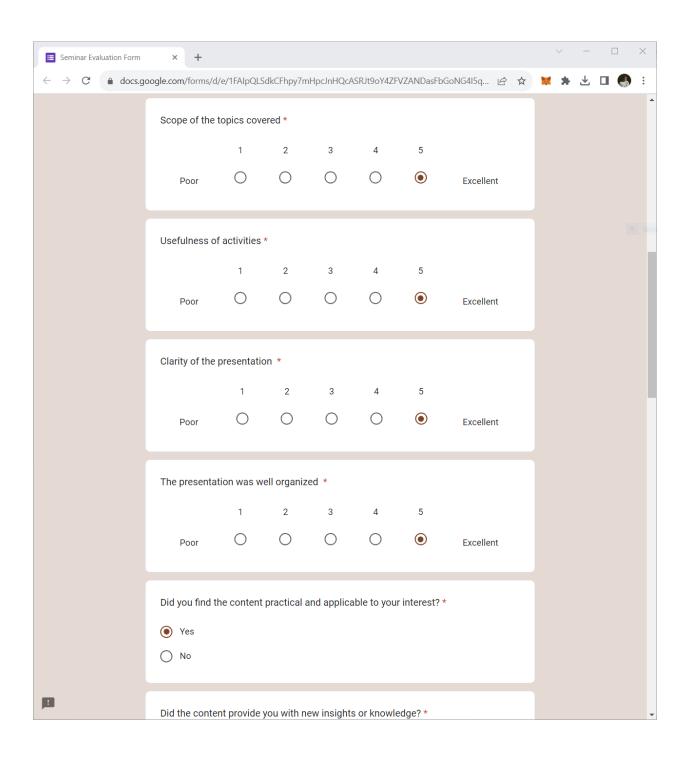
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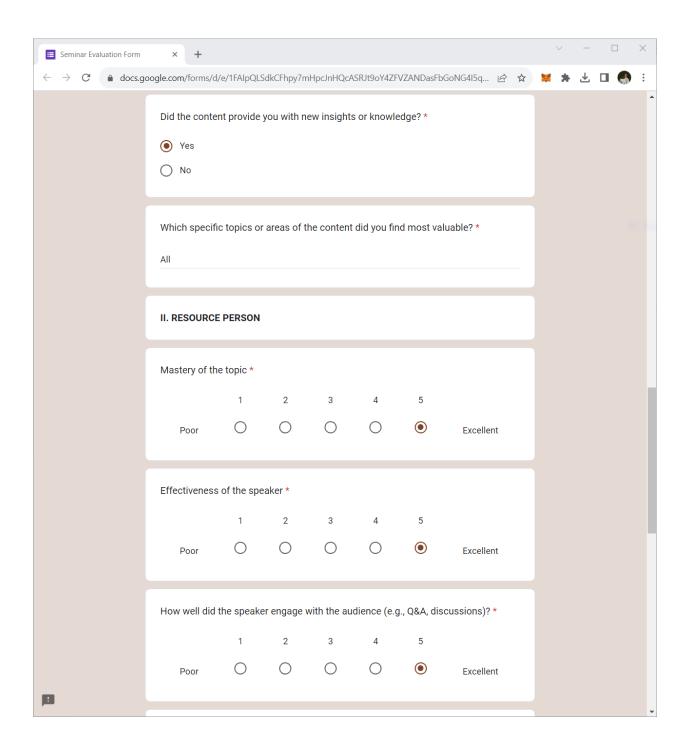
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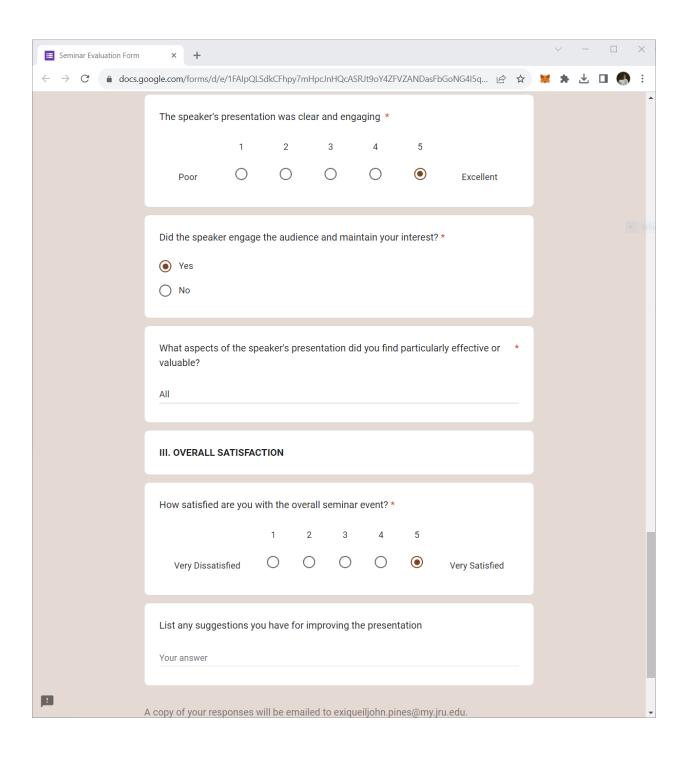
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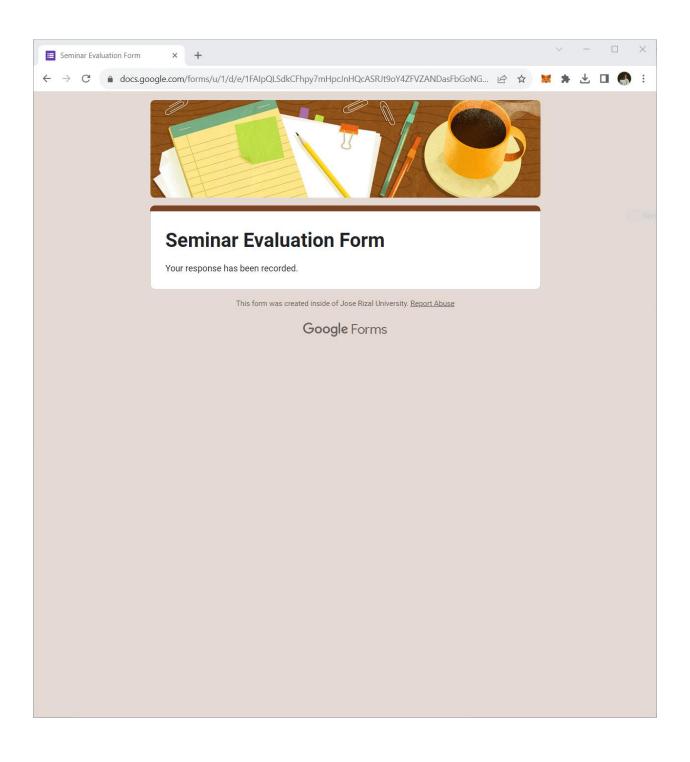
October 9, 2023















#### INSTITUTE OF COMPUTER ENGINEERS OF THE PHILIPPINES

presents this

## Certificate of Participation

to

## **EXIQUIEL JOHN A. PINES**

for his/her active and invaluable participation on
Topic: Quantum Computing for Computer Engineers

during the conduct of 3<sup>rd</sup> International Convention and 11th National Convention of the
Institute of Computer Engineers of the Philippines,

held from the 14th to the 15th of September 2023 at The Farm @ Carpenter Hill

Koronadal City, South Cotabato, Philippines, with the theme

"Engineering Digital Transformation for Smart and Sustainable Communities."

Given this 15th day of September 2023 at The Farm @ Carpenter Hill Koronadal City, South Cotabato, Philippines.

ENGR. PERCILA M. PANAGDATO, PCpE

Overall Chairman, ICpEP IntNatCon 2023 President, ICpEP-R12



DR. ROBEN A. JUANATAS, PCpE

National President, ICpEP