

### HES - Volunteering Program Verification Form

This form is to be used to document volunteering hours. If a student volunteers for multiple organizations, a separate form must be used for each organization. **This form must be turned in by the 28<sup>th</sup> of each month, the latest.**

I certify that the scholar Rayan Saleh Hassan completed a total of 10 hours of service at InnovaThrive.

The hours were completed hours as per the below:

Hours # 5 (date) \_2/12 – 6/12\_ (initials of supervisor) \_\_A.K.\_\_\_\_

Hours # 0 (date) \_9/12 – 13/12\_ (initials of supervisor) \_\_A.K.\_\_\_\_

Hours # 0 date) \_16/12 – 20/12 (initials of supervisor) \_\_A.K.\_\_\_\_

Hours # 5 date) \_23/12 - 27/12 (initials of supervisor) \_\_A.K.\_\_\_\_

Brief description of the activities the scholar performed or participated in:

For November:

I conducted research on the application of AI in preventive maintenance for industrial equipment. My study focused on integrating AI technologies, such as machine learning algorithms and IoT sensors, to predict and prevent machinery failures. I analyzed how these technologies optimize maintenance schedules, minimize downtime, and extend the lifespan of equipment. My work included examining case studies and relevant statistics, notably finding that AI-driven systems can reduce maintenance costs by up to 30%. I also addressed both the advantages and challenges of implementing these systems, such as the high initial investment and the necessity of accurate data collection. Finally, I explored future opportunities for AI integration in areas like renewable energy and complex multi-machine environments to further enhance industrial efficiency.

For December:

I researched the concept of AI-powered green architecture, focusing on the development of smart cities with sustainable urban planning. I investigated how AI contributes to eco-friendly city designs, including energy-efficient building solutions and IoT-integrated green infrastructure. My analysis covered applications like AI-driven smart grid systems, which optimize energy distribution and cut down emissions. Using case studies and statistics, I showcased how AI significantly reduces emissions in urban areas. Additionally, I evaluated the benefits of sustainable urban growth while considering the challenges of high initial costs. Finally, I explored potential future developments,

such as AI applications in water conservation systems, to further enhance green architecture initiatives.

Written feedback about the scholar's performance:

Rayan demonstrated advanced research, analytical, and critical thinking skills by exploring AI applications in preventive maintenance and green architecture, integrating case studies and data-driven insights.

Please rate the overall performance of the scholar at your organization:

	Mastery (5)	Proficient (3)	Emerging (1)
<b>Problem solver</b>	X		
<b>Engaged &amp; Committed</b>	X		
<b>Open-minded &amp; multicultural</b>	X		

Signature & stamp Andrew El Kahwaji

Printed Name Andrew El Kahwaji

Date 26/12/2024

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CEO of InnovaThrive