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Letter of Reference

Ms Hanady Gebran born on July 14, 1998 was employed in our Fraunhofer-Institute for Cognitive Systems IKS from October 1, 2022 to March 31, 2023 as a working student.

The Fraunhofer-Gesellschaft based in Germany is the world's leading applied research organization. Prioritizing key future-relevant technologies and commercializing its findings in business and industry, it plays a major role in the innovation process. A trailblazer and trendsetter in innovative developments and research excellence, it is helping shape our society and our future. Founded in 1949, the Fraunhofer-Gesellschaft currently operates 76 institutes and research units throughout Germany. Over 30,000 employees, predominantly scientists and engineers, work with an annual research budget of €2.9 billion. Fraunhofer generates €2.5 billion of this from contract research.
Safe Intelligence — this forms the core brand of the Fraunhofer Institute for Cognitive Systems IKS. Connected cognitive systems drive innovation in many sectors, for example in autonomous vehicles, medical devices or intelligent automation within industry. They should always take full advantageof the potential offered by artificial intelligence, while remaining demonstrably safe and reliable at the same time. This is why Fraunhofer IKS researches both artificial intelligence and software engineering — we consider resilience and intelligence as part of the same process.

Ms Gebran worked on her Master´s Thesis in the Quantum-Enhanced AI department. The topic of the thesis included the following aspects:

- Design choices for Quantum Convolutional Neural Networks
- Implementation and evaluation of quantum machine learning algorithms
- Programming in Pennylane and Qiskit

Ms Gebran impressed us with her comprehensive, wide-ranging and in-depth specialist knowledge, which she was always able to apply confidently and in a target-oriented manner in practice. She regularly attended a variety of internal and external specialist seminars to successfully further her education, consistently enriching her work for our institute with new ideas.

Due to her very good perception, she was always able to understand complex situations immediately and to find very good solutions straight away. Ms Gebran always worked with a high level of initiative and completely identified with her tasks and our institute at all times. We would like to specifically highlight her great commitment. The willingness of Ms Gebran to learn was excellent. In extremely stressful situations, she always displayed exemplary resilience.

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She always completed her tasks completely independently, extremely carefully and according to a well thought-out plan. She worked calmly, thoughtfully, in a target-oriented manner and extremely precisely at all times. She continuously impressed us particularly in terms of quality and quantity. Ms Gebran was extremely reliable.

Already after a short period of induction, she was able to find very good solutions, even for the most difficult problems and always achieved excellent work results. Ms Gebran has always fulfilled her responsibilities to our utmost satisfaction.

She was respected by everyone for her consistently friendly and well-balanced demeanour. She was always helpful, courteous, and where necessary, she put the interests of others before her own. Her personal conduct towards her line managers and colleagues was always exemplary and loyal.

The collaboration with Ms Gebran was very pleasant and gratifying. We believe that she is very well-suited for her chosen profession, would like to thank her for her consistently very good performance, and wish her continued success and all the best in her future career and private life.

Munich, March 31, 2023

Jeanette Lorenz

PD Dr. habil. Jeanette Miriam Lorenz
Department Head
Quantum-Enhanced AI