

## Statement of interest

October 10, 2023

Dear Sir/Madam,

I am so excited to apply for the Xanadu internship program! I am in my second year of Master's degree in mathematics and I am researching quantum computational models with nonlinear optics. This opportunity is perfect for me as I will be able to apply all the experience I've gained during my studies as well as gain new important knowledge about the field.

My research can support the fact that I am driven by quantum computations. I researched use cases for quantum algorithms, I researched the effect of noise on quantum algorithms, I researched quantum entangling transformations with KLM protocol. I believe in the advantage that quantum computers will bring. That is why I am sure that I will be a great fit for Xanadu and why this is a crucial step in my career.

I have an undergraduate degree in computer science and want to incorporate my programming skills into my work as much as possible. My recent project "Strawberry Fields Composer" showed me the difference between Fock and Gaussian backends. Specifically, I was inspired by the possibility of combining these ideas in a Bosonic backend. And I am really interested in working on compiling Gaussian subcircuits or on another project involving encoding the quantum structure of light.

With "Strawberry Fields Composer" I applied for a Unitary Fund and will be developing this idea throughout this year. I hope to get recognition from the community and quantum leaders in Xanadu.

To sum up, this internship is the greatest opportunity of my life and I would be more than grateful to hear back from you soon!

Yours faithfully,

**Ivan Ogloblin**