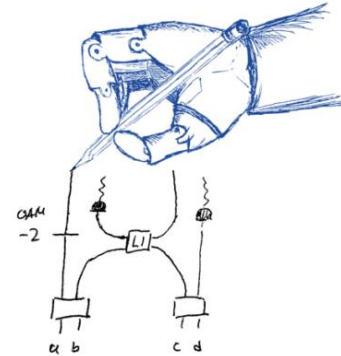




MAX PLANCK INSTITUTE FOR THE SCIENCE OF LIGHT

Our new independent theory research group at the *Max Planck Institute for the Science of Light* (Erlangen, Germany), led by [Mario Krenn](#), will investigate how **new artificial intelligence (AI)** can make **conceptual advances in physics**, in particular in quantum physics and quantum optics.

The idea is the following: Surprising and creative ideas are the pillar of science, thus finding them more systematically could significantly accelerate scientific and technological progress. The goal of our group is exactly that: We aim to establish computer algorithms as a (re)source of inspiration for human scientists. Our scientific target is the design of new, *creative* quantum experiments and quantum-enhanced technology. With these computer-inspired solutions, we want to find and *understand* previously unknown scientific ideas and concepts. Technologically, we will advance and invent interpretable AI algorithms for physics, such as graph-theory-based topological optimization and explainable deep machine learning methods to solve outstanding open questions in quantum optics.



To bring this vision to reality, we are looking for

- 1 postdoctoral researcher** (2 years + possible extension)
- 2 PhD students** (3 years + possible extension)

For the **PhD position**, we are looking for candidates with a strong quantum physics background, strong programming skills, and excitement about artificial intelligence and machine learning to advance physics. If you find these topics exciting, please apply with a CV (including transcript), a motivation letter, a contact who can provide a reference letter (e.g. Master thesis advisor) and the description of your favourite coding project you have worked on (any topic, not necessarily a scientific project).

For the **postdoctoral position**, we are looking for candidates with a strong interest and background in classical & quantum optics and quantum physics, solid programming skills, experience with machine learning libraries such as PyTorch and a genuine interest in the history and philosophy of science. If you find these topics exciting, please apply with a CV (including publication list), a motivation letter, two contacts who could provide a reference letter and the description of two of your favourite coding project you have worked on (any topic, not necessarily a scientific project).

Please send your application materials directly to [Mario Krenn](#). We will start interviewing candidates immediately until the positions are filled. Ideal starting date: **September 2021** or shortly thereafter.

The Max Planck Institute for the Science of Light is a world-leading research institute dedicated to fundamental research on all areas related to the science of light. We offer competitive salaries (TVöD E13; 100% for Postdocs, 75% for PhD candidates) and an international research environment at MPL. The Max Planck Society is committed to increasing the number of individuals with disabilities in its workforce and therefore encourages applications from such qualified individuals. Furthermore, the Max Planck Society seeks to increase the number of women in those areas where they are underrepresented and therefore explicitly encourages women to apply. The Max Planck Society strives for gender and diversity equality, welcoming applications from all backgrounds.