



Univ.-Prof. Dr. Mario Krenn

*Machine Learning for Science
Artificial Scientist Lab*

University of Tübingen

Department for Computer Science
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<http://mariokrenn.wordpress.com/>
[Current Group Website at MPL](#)

Our group builds artificial intelligence systems for
discovering new concepts, experiments and ideas in physics.

To accelerate this effort, we need your help!

We have

**several fully-funded open PhD
and Post-Doc positions (m/f)**

in our group -- which just moved from the Max Planck Institute in Erlangen to the
University of Tübingen, one of *Europe's most vibrant hub for artificial intelligence* research.

A list of concrete potential projects:

- Development of **modern auto-differentiation (JAX-based) physics simulators** for the discovery of new physics experiments (example [here](#))
- **AI-driven discovery** of hardware for some of the most thought after **quantum information** technology, quantum-enhanced **microscopes and telescopes** (example [here](#)), and AI-driven discovery of **new physics experiments to test quantum-gravity** and observe **gravitational waves** (examples [here](#) and [here](#))
- **Inventing state-of-the-art AI-driven exploration, optimization, and search algorithms** in extremely complex and enormously large spaces motivated by physics and chemistry
- Developing **interpretable AI for scientific discovery** in physics (example [here](#))
- **Formal mathematics** (using Lean's mathlib) for Automated Discovery in Physics
- Agentic frameworks (e.g. LLMs with tool-use) for **closed-loop idea generation** for physics (example [here](#))

Other projects are certainly possible too. In general, we believe that building autonomous scientific systems is not just a technical question, but requires understanding and insights from the **philosophy of science** – see e.g. [here](#).

If you are excited to use artificial intelligence techniques for scientific discoveries in physics, send us your Application, including a CV, a short motivation letter, the names & contact of two potential references to mario.krenn@uni-tuebingen.de. **The opening will remain valid until 15.07.2026.**

PhD positions will be for a duration of 3 years, post-doc positions will be for 2 years.

Requirements: Master/Bachelor in Physics, Computer Science or related fields (for PhD); Doctorate in Physics, Computer Science or related fields (for Post-Docs).

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The positions are funded via the Cluster of Excellence (Machine Learning for Science), the ERC Starting Grant ArtDisQ and the University of Tübingen. Salary will be determined according to the German collective wage agreement in public service (E 13 TV-L). The University aims to increase the proportion of women and therefore urges suitable qualified women scientists to apply. Qualified international researchers are expressly invited to apply. Disabled candidates will be given preference over other equally qualified applicants. The employment will be handled by the central administration of the University of Tübingen.