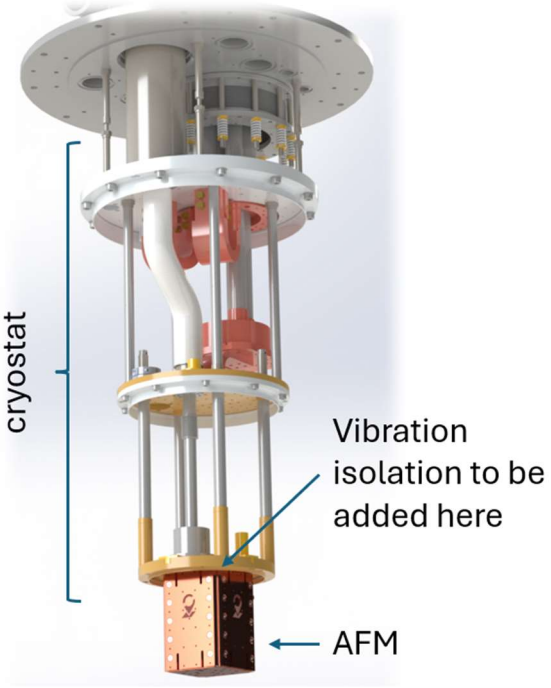
INTERNSHIP: Mechanical Engineer (m/w/x)

Minimum duration is 5 months

Develop cryogenic vibration isolation for new diagnostic tools that will enable the quantum revolution at a fast-growing startup

Quantum computing will allow the world to tackle problems that are currently impossible to solve. Manufacturing quantum chips is extremely complex and they often don't fully work as intended. When this happens, there is no way to find out why, which component failed, and how to improve the production processes. This is one of the major road-blocks towards scaling quantum chip production. Our novel microscope, based on SQUID-on-tip sensing, will provide a solution to this problem and therefore will help unlock the quantum revolution.

As a Mechanical Engineering intern you will develop cryogenic vibration isolation for our microscope. The AFM tip and sensor need to be kept at a constant distance away from the chip, with less than 1 nanometer distance. As a consequence, vibrations coupling into the system greatly decrease the image quality. In particular, the pulse-tube cooler that cools the microscope to its operating temperature of 1 K introduces large excitations to the top of the microscope that need to be reduced.



You will design this vibration isolation together with the rest of the design team from first hand calculations over simulations to a mechanical design. We believe in fast iterations and you will produce and test at least two versions of your design on the actual tool during your internship.

Impact of the role:

Our company is developing one-of-its-kind technology that can solve one of the most important problems in the quantum industry. You will be a key member of the team developing this technology, and your talent and hard work will have an impact on the quantum industry as a whole. You will become a key part of our small, but fast-growing team, and you will join us during a very exciting time: We are currently assembling our commercial prototype (target operation is Q1 2025) and are talking to first customers.

Ideal Candidate

We will support you to during your internship at QuantaMap, and ideally you start with:

- appetite to take responsibility and make an impact in a small, growing team,

- demonstrated dedication and perseverance, consistently striving for excellence and motivating others to achieve shared goals,
- MSc in mechanical engineering, mechatronics, or similar,
- hands-on experience in designing precision parts, ideally for high-tech environments.

Please do highlight other experience such as:

- knowledge of cryogenic technology,
- semiconductor manufacturing,
- team-based design challenges.

This role requires you to be an independent problem solver, to make things work, to have grit and a passion for building things. You'll be working closely with a small and very supportive team, so close communication and shared team goals will be part of daily life.

In a dynamic start-up, the environment and goals can change fast and you'll be someone who enjoys this. In parallel though, your work will be of high integrity and completed with scientific rigour.

Please do not hesitate to apply if you think this could be the right opportunity for you, even if you do not tick all of the boxes.

What we have to offer

We offer you a challenging internship (minimum internship duration is 5 months) with ample opportunity to learn and grow. You will join a young and diverse team extremely motivated to solve hard problems that do not have solutions yet.

At Quantamap, we are committed to diversity and to creating an open and inclusive environment where everyone can speak up, learn and thrive. We explicitly welcome applicants from all backgrounds and identities to further our inclusive workplace. We value mentorship, trust, kindness, and ambition as key to achieving our ambitious goals together.

How to apply

Please send us your CV and a short message why you want to intern at QuantaMap to join-us@quantamap.nl and we will suggest an interview date.