QuantaMap

INTERNSHIP: Database Engineer

Preferred duration 5 months

Design and Implementation of a Scalable Database System

You will help design and build a scalable database system to store and manage experimental data generated by our quantum chip analysis platform. The system should support a variety of data types, including experimental parameters, setups, calibrations, and microscope images, accommodating both unstructured and semi-structured data. The database must be flexible to adapt to new instruments and experimental protocols, and provide an accessible, Python-based API for querying and extracting data, ideally in a standardized, labeled format. You will work closely with our software and hardware teams to ensure seamless integration with our control system, delivering a solution that is easily accessible to experimentalists working in the lab.

Candidate profile

We will support you throughout your internship at QuantaMap. To hit the ground running, you ideally bring:

- appetite to take responsibility and make an impact in a small, growing team;
- demonstrated dedication and perseverance, with a drive to motivate others toward shared goals;
- (currently pursuing) a degree in Computer Science, Data Science, Physics, or a related field;
- experience with Python programming, databases (e.g. DuckDB, MongoDB or GraphQL), and data modeling.

Bonus points for experience with:

- scientific data formats (e.g., HDF5, xArray), API development, laboratory instrumentation and experimental data.

Beyond the technical skills, you're an independent problem solver with grit and a genuine passion for building things. You thrive in close-knit teams, communicate openly, and hold your work to a high standard — even when the goalposts move.

Impact of your 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. Your work will allow researchers to efficiently store, retrieve, and analyze experimental data, accelerating the development and scaling of quantum chip production.

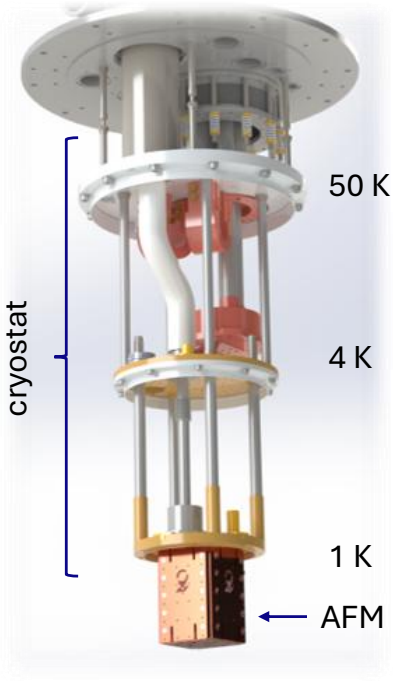
What we have to offer

You'll join a young, diverse, and highly motivated team working on technology that doesn't exist anywhere else. This is a hands-on internship — you'll own real work, iterate quickly, and see the results of your contributions on an actual tool.

- **Mentorship:** you'll work closely with experienced engineers and researchers who are invested in your growth
- **Impact:** your work directly shapes a product that is already in the hands of our first customers
- **Environment:** open, inclusive, and built on trust — we explicitly welcome applicants from all backgrounds and identities

About QuantaMap

We are a Leiden-based deep-tech startup developing cutting-edge metrology and diagnostic tools for the quantum industry. Quantum computing has the potential to tackle problems that are currently impossible to solve, with impact across fields such as material research, drug discovery, and logistics. But quantum chips are extraordinarily complex and difficult to produce. When they do not perform as intended — and they often don't — there is currently no way to identify which component failed or how to improve the production process. This is one of the major roadblocks to scaling quantum chip production.



We have developed a novel microscope based on IP-protected SQUID-on-tip sensing technology. By integrating a quantum sensor into the probe of an atomic force microscope, the system can image temperature, electric currents, magnetic fields, and surface structure simultaneously — all at nanoscale resolution and under cryogenic conditions matching the actual operating environment of the chip.

How to apply

Please send your CV and a short message explaining why you want to join QuantaMap to join-us@quantamap.nl. We will get back to you with a suggested interview date. Don't hesitate to apply even if you don't tick every box — we value potential and passion as much as experience.