

Quantum Design Engineer

Location: Garching (Munich), Germany

Employment Type: Full-time, on-site or hybrid

About Peak Quantum

Peak Quantum is a quantum hardware startup founded in 2024 and based in Garching near Munich, pioneering error-protected superconducting quantum processors. By embedding error resilience directly into qubit hardware, we reduce error correction overhead and aim to deliver scalable, fault-tolerant quantum computing from the hardware up.

We collaborate closely with academic and industrial partners in ecosystems like the Munich Quantum Valley to co-develop the future of quantum technology. Our approach combines scientific rigor with an engineering mindset, and our performance already exceeds that of incumbent players in QPU reliability.

Your Role

As a Quantum Design Engineer at Peak Quantum, you will play a central role in creating and refining the architectures that make our processors inherently error-protected. Unlike conventional qubit design, your work will focus not only on maximizing coherence and fidelity, but also on embedding error resilience directly into the hardware layout and circuit topology.

At this early stage, your designs will move quickly from simulation to fabrication to measurement. You will collaborate closely with fabrication and measurement engineers, ensuring that theoretical advances become manufacturable devices that push the frontier of scalable quantum computing.

What You'll Do

- **Design and simulate superconducting qubits and multi-qubit circuits**, focusing on both high coherence and intrinsic error resilience.
- **Develop novel architectures** that reduce the need for external error correction by leveraging design-level protection.
- **Benchmark decoherence mechanisms** and engineer circuit geometries that minimize loss, crosstalk, and noise sensitivity.
- **Extend design workflows** by combining electromagnetic solvers (Ansys HFSS) with circuit-level and custom simulation tools.
- **Collaborate across disciplines** to integrate design with fabrication recipes and measurement protocols.
- **Document and analyse results**, using structured feedback loops and data to drive continuous improvement.

Who You Are

- You have a MSc or PhD in Physics, Electrical Engineering, or a related field.
- You have expertise in superconducting qubits, circuit QED, or microwave quantum devices.

- You are proficient with electromagnetic and circuit simulation tools (e.g. Ansys HFSS or similar).
- You have experience in Python programming
- You have a strong grasp of decoherence mechanisms and transmission line theory
- You are familiar with passive and active RF/MW components
- You are a strong communicator and strong collaborator across design, fabrication, and measurement teams.
- You are fluent in English (written and spoken).

We know that great talent comes in many forms. Even if you do not meet every point on this list, we strongly encourage you to apply. We welcome diverse backgrounds, skill sets, and perspectives, and we are ready to teach.

What We Offer

- **Mission-driven innovation:** Design hardware that is intrinsically error-protected, directly shaping the path to scalable quantum computing.
- **Early-stage responsibility:** As one of our early hires, your designs will define our prototypes and influence the roadmap from day one.
- **Collaborative environment:** Work in a science-driven team at the intersection of design, fabrication, and experiment.
- **Professional growth:** Mentoring, training, and the opportunity to grow into a leading role as we expand.
- **Competitive compensation:** Attractive salaries including additional benefits.
- **Corporate fitness programs and health benefits.**
- **Relocation support.**
- **A great place to live and work:** Located in the Munich area (Garching), you will be at the heart of one of Europe's leading quantum technology hubs, surrounded by world-class research and innovation networks. The region combines the cultural vibrancy of Munich with beautiful nature and abundant opportunities for outdoor activities.

How to Apply

Send your CV, a short cover letter describing your design experience, and (optionally) an example of a project or simulation you are proud of to careers@peakquantum.de.

We're an equal opportunity employer and welcome applicants from all backgrounds and identities.

If you have questions, feel free to reach out: **we'd love to hear from you.**