

## About Orange Quantum Systems

Orange Quantum Systems is a spin-off of QuTech that accelerates the research on quantum physics and the development of quantum technology for quantum computing. We support R&D labs with custom characterization and calibration software and develop customized full-stack setups for R&D into quantum computing. Orange Quantum Systems is part of Quantum Delft's world-leading ecosystem for innovation in quantum technologies.

## The project

As quantum information processing systems become more complex, the problem of characterization and calibration of quantum systems becomes ever more significant. In typical quantum computing labs, calibration routines are typically controlled manually by the experimenter. This approach is not scalable, and the complexity of calibration routines is a bottleneck in the development of quantum computers. Therefore, there is a need for new automated calibration systems. The aim of this project is to develop a system for automated calibration of a single qubit. All the necessary experimental schedules and data analysis functions for calibration of a transmon qubit will be developed, along with automated calibration routines for the relevant physical parameters. These routines will be integrated together into a fully automated calibration system.

## Required skills and expertise

We are looking for a motivated MSc. student (applied physics, computational science, or engineering) with an interest in (experimental) quantum physics and programming. For this internship we require that you:

- Have completed some courses in quantum information processing and are familiar with the basics of quantum-state and quantum-process tomography.
- Are familiar with common scientific Python libraries and data visualization (e.g., scipy, numpy, matplotlib, jupyter, etc.).
- Are interested in further developing your software engineering skills (version control, test-driven development, documentation).

## What we offer

We offer a paid internship in an inspiring environment with a dedicated team of scientists, engineers at the forefront of quantum technology.

## Interested?

If you have any questions on the project, please do not hesitate to contact us.

If you are interested in applying for the project, please send a motivation letter and resume to Adriaan Rol ([recruitment@orangeqs.com](mailto:recruitment@orangeqs.com)).