



# Internship Opportunity

## Survey Engineer at CERN - Summer 2024

### TOPIC

Discovery internship for survey engineers or geomatics engineers

### Introduction

At CERN, the European Organization for Nuclear Research, physicists and engineers are probing the fundamental structure of the universe. Using the world's largest and most complex scientific instruments, they study the basic constituents of matter - fundamental particles that are made to collide together at close to the speed of light. The process gives physicists clues about how particles interact, and provides insights into the fundamental laws of nature. Find out more on <http://home.cern>.

Join the Geodetic Metrology group at CERN, where you will take part in the metrology and alignment of the wide variety of components that are used in particle accelerators and detectors. **You will be using, developing or testing state-of-the art surveying tools and software to achieve the sub-millimetre accuracy necessary to achieve our goals.** Take part!

*Diversity has been an integral part of CERN's mission since its foundation and is an established value of the Organization.*

**Indicative program:**

- Discovery of CERN tools/techniques
  - Laser tracker
  - Caliper measurements
  - Precision leveling
  - Tilt measurement
  - Terrestrial Lidar
  - Collimator
  - Gyro-theodolite
  - Trisquare, comparator, etc.
  - Positional astronomy
- Instrumentation, calibration, and calibrations
  - Field check AT40x
  - Preventive checks of leveling systems
  - Calibration of EDM theodolites
  - Wyler control on sine table
  - Calibration of offset rulers
- Softwares
  - Introduction to *SpatialAnalyser (New River Kinematic)*
  - MC Compensation (LGC2 internal software)
  - Getting started with TSUNAMI internal software (measurement and alignment)
  - *CloudCompare*
  - EAM Infor
- Production
  - Workshop fiducialisation (metrology)
  - Laser scanning
  - Post-processing of 3D scans
  - Component alignment
  - Implementation of the section's equipment database on EAM Infor

**Qualifications:**Eligibility criteria:

- You are in your 3<sup>th</sup> to 4<sup>th</sup> year of master's degree.
- You are a full-time student and will remain a full-time registered student throughout the internship at CERN
- You have good working proficiency in English and/or French.

Skills and/or knowledge:

- Interest in technology
- Interest in sciences
- Diligence and motivation
- Teamwork
- Adaptability



## ADDITIONAL INFORMATION

### What we offer:

- An internship contract for a duration between 4-6 weeks
- A monthly allowance of 1,557 Swiss Francs
- One of CERN's key missions is education. Our experts enjoy sharing knowledge with committed and passionate students.

### How to Apply:

You will need the following documents to complete your application:

- A CV in English or French (in a PDF format)
- Apply on the short-term internship 2024 here: <https://jobs.smartrecruiters.com/CERN/743999936801103-short-term-internship-2024> and inform [be-gm-secretariat@cern.ch](mailto:be-gm-secretariat@cern.ch) on your application.

### Further info and contacts:

- In case of questions, please contact : [pierre.valentin@cern.ch](mailto:pierre.valentin@cern.ch)
- Some info about the group: [HERE](#) and [HERE](#).
- Some further info about our activities: [Video surveyor at CERN](#), [Video Alignment systems](#)

