

*pen up your mind!*

*CERN openlab Student Programme*

CERN is where the World Wide Web was born 20 years ago...  
... And where dizzying challenges in networking, data processing and storage abound!

Located just outside Geneva and straddling the border between Switzerland and France, CERN is the world's leading particle physics research institute. CERN explores what matter is made of and what holds it together by accelerating protons to a fraction under the speed of light and then smashing them together. The Large Hadron Collider (LHC) will start generating some 15 million gigabytes of data per year this summer.

Through close collaboration with leading industrial partners, CERN acquires early access to technology well before it reaches the general computing market. CERN openlab is the framework for evaluating and integrating cutting-edge IT technologies and services. Together with our partners, HP, Intel, Oracle and Siemens, we are working on:

- Computer Server Platforms and Related Software
- Relational Databases
- Network Monitoring Software
- Automation and Controls Software
- Grid Middleware

By joining the CERN openlab student programme, you will work with some of the latest hardware and software technologies and see how advanced IT solutions are used in High Energy Physics.

You will also become acquainted with other key technologies for industrial and commercial purposes, through external visits and special invited talks.

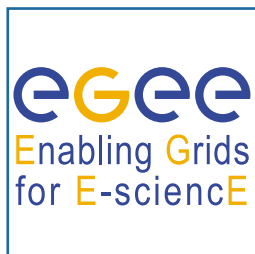
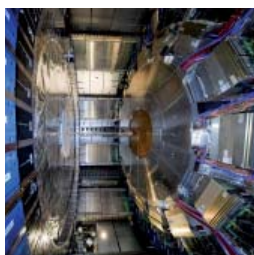
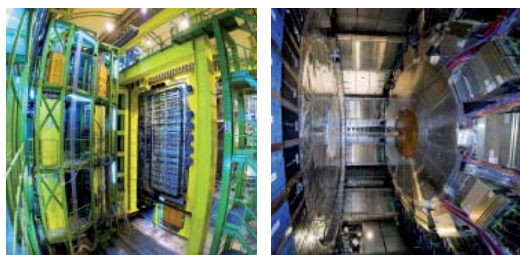
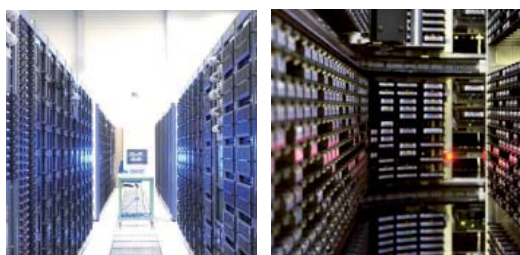
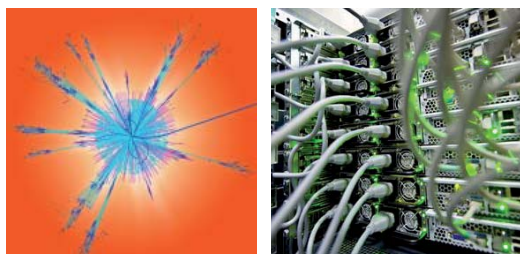
The CERN openlab Summer Student Programme is much more than just a summer at CERN. It can lead to follow-on projects in your home institute at bachelor, master or Ph.D level. It may even inspire you to become an entrepreneur in cutting-edge computing technologies.

## Contacts

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Open up your mind... And apply!  
[www.cern.ch/openlab](http://www.cern.ch/openlab)

# CERN openlab Student Programme 2009



## *Who should apply?*

B.Sc., M.Sc., or Ph.D. students in Computer Science or Physics, interested in working on cutting edge technology projects for two months during the period June-September 2009, with the possibility of follow-on projects in their home institutes.

## *How to join?*

Candidates for the CERN openlab Student Programme are normally proposed by University supervisors. The student's CV, a recommendation by the supervisor, and an indication of the preferred area of work should be sent to [sverre.jarp@cern.ch](mailto:sverre.jarp@cern.ch) by 31st March 2009. Confirmation of student placement will be made to supervisors shortly thereafter.

## *Stipend*

The stipend for a two-month study is 5000CHF for travel, accommodation and per diem, normally sponsored 50% by the student's home institute or university and 50% by CERN and the CERN openlab industrial partners of CERN. Students must have their own health insurance.

## *Students projects*

Several projects and groups at CERN participate in the openlab student programme, including the WLCG (Worldwide LHC Computing Grid), EGEE (Enabling Grids for E-Science). Examples of projects that students undertook in 2008 include:

- Database virtualisation
- Benchmarking state-of-the-art hardware
- Multithreaded software solutions
- Long distance replication of data between Grid sites
- Investigation of efficient network packet filters
- Testing of performance monitoring software

## *Other activities*

A series of lectures by experts in various domains of High Throughput Computing, and study tours to universities and CERN facilities are part of the programme. The openlab students may also participate in a wide range of physics and technology lectures that are part of the general CERN summer student programme.