PRACE Training and Education with **MOOCs** and **CodeVault**

PRACE

THE PARTNERSHIP FOR ADVANCED COMPUTING IN EUROPE

#CODE VAULT

MOOC
FREE ONLINE LEARNING

Since 2008 PRACE has offered a diverse training programme, including seasonal schools, workshops and scientific and industrial seminars. Additionally, the PRACE Training Portal, **www.training.prace-ri.eu,** provides access to video tutorials and an extensive range of training materials. Early in 2017, PRACE introduced two new educational opportunities: **Massive Open Online Courses (MOOCs)** and the **CodeVault**, a core repository for training codes open to everyone worldwide.

www.prace-ri.eu

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Massive Open Online Courses (MOOCs)

Different from traditional online course materials, such as videos of filmed lectures and scripts, PRACE MOOCs provide an interactive user forum that strongly supports community interaction between educators and learners (students, scientists, etc.). PRACE MOOCs are delivered using the the FutureLearn platform.

Currently, two MOOCs are available:

- **Supercomputing: Discover how supercomputers are powering scientific breakthroughs**

  This supercomputing course was developed by PRACE and the Edinburgh Parallel Computing Centre (EPCC) at the University of Edinburgh in collaboration with SURFsara from the Netherlands.

  It is a free online course which lasts 5 weeks, including 2 hours of video lectures per week. The course is designed for anyone interested in leading-edge computing technology, supercomputers, or the role that computer simulation takes in modern science and engineering.

  To find out more and to register please visit: **www.futurelearn.com/courses/supercomputing**

- **Managing Big Data with R and Hadoop**

  This course, developed by PRACE, teaches how to manage and analyse big data using the R programming language and Hadoop programming framework.

  It is designed for people interested in data science, computational statistics and machine learning. It is also useful for advanced undergraduate students and first year PhD students in data analysis, statistics or bioinformatics who wish to understand HPC.

  The free online course lasts 5 weeks, including 2 hours of video lectures per week.

  To find out more and to register please visit: **www.futurelearn.com/courses/big-data-r-hadoop**

PRACE intends to run each MOOC two to three times per year. New MOOCs will be launched in the near future.

CodeVault

The PRACE CodeVault is an open repository containing various high-performance computing code samples for the HPC community. The platform supports self-education for learning HPC programming skills by allowing HPC users to share example code snippets, proof-of-concept codes, and more.

The PRACE CodeVault contains training material from PRACE partners, as well as example codes for common HPC kernels, such as dense and sparse linear algebra, spectral and N-body methods, structured and unstructured grids, Monte Carlo methods and parallel I/O. The code samples are published as open source and can be used both for educational purposes and for inclusion in real application suites (as permitted by particular licenses).

The PRACE CodeVault is open with anonymous read access. Any contributions (new code samples, bug fixes, improvements, etc.) are warmly welcomed.

The PRACE CodeVault is hosted at **gitlab.com/PRACE-4IP/CodeVault**

See also the PRACE Fact Sheet “Training and Education”: **www.prace-ri.eu/media/factsheets**

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