

LABORATORY OF
CYBER SECURITY
SOLUTIONS
BASED ON
DATA ANALYSIS



Basque Center for
Applied Mathematics

About the laboratory

The laboratory of Cybersecurity solutions based on data analysis of the Basque Center for Applied Mathematics - BCAM offers tools for tasks such as intrusion analysis, anomaly detection and predictive analysis, among others.

We have a team of statisticians, computer scientists, and mathematicians, and we have academic and industrial experience in the development and implementation of automatic learning techniques, statistics for the analysis of large volumes of data, information extraction, and prediction.

Our Services



Data Analysis:

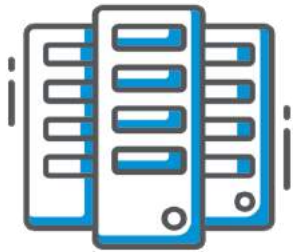
Development of programs for data analysis and prediction based on statistics and machine learning.



Optimization:

Development of optimization algorithms to improve the management of resources and processes

Computational Cluster



Our high-performance computational cluster offers high computational capacity for the development of various experiments. It has nodes of calculation and parallel storage of great capacity and performance and InfiniBand connection between the nodes for a minimum latency.

The management of resources is done through a queue manager (Slurm) that allows you to prioritize and reserve different resources. Thanks to this system, the resources (memory, cpu and storage) necessary for members or projects related to the Basque Cybersecurity Center (BCSC) are exclusively reserved.

In addition, it has specially configured and optimized software to perform large calculations: Intel and GNU Compilers, Matlab in parallel for cluster, GROMACS, FreeSurfer, R and many other libraries for development of parallel applications and the scientific field.

$$\begin{aligned} & \in \mathbb{N} \text{ with } M > 0 \\ \Omega_M &= \{ \theta_0, \theta_1, \dots, \theta_M \} \\ 0 = \theta_0 &> \theta_1 > \dots > \theta_{M-1} > \theta_M = -\tau \\ Y_M &:= \mathbb{R}^{\Omega_M \setminus \{0\}} \cong \mathbb{R}^M \\ Z_M &:= \mathbb{R}^{\Omega_M} \cong \mathbb{R}^{M+1} \end{aligned}$$

About BCAM

BCAM is an international research centre in the field of Applied Mathematics. One of its main objectives is to put mathematics at the service of society through the transfer of knowledge, extending the results of its research to sectors such as biosciences, energy, advanced manufacturing or artificial intelligence and working jointly with institutions and companies. More than 100 researchers of 25 nationalities work in the different areas of the centre, ranging from data science or computational mathematics or mathematical modelling.

BCAM has recently promoted its Knowledge Transfer Unit (KTU), a platform to develop mathematical solutions for scientific challenges based on real-life applications and to increase collaboration with industry.

These knowledge transfer activities are carried out in the form of strategic collaborations, R&D&I projects, joint positions, training courses, supervision of master's and doctoral students, organisation of dissemination activities...



Contact



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